

CHAPTER 4

POINT AND NONPOINT SOURCE CHARACTERIZATION OF THE WATAUGA RIVER WATERSHED.

4.1 Background.

4.2. Characterization of HUC-11 Subwatersheds

- 4.2.A. 06010103030
- 4.2.B. 06010103040
- 4.2.C. 06010103050
- 4.2.D. 06010103060
- 4.2.E. 06010103070
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- 4.2.H. 06010103100
- 4.2.I. 06010103110
- 4.2.J. 06010103120
- 4.2.K. 06010103130
- 4.2.L. 06010103140
- 4.2.M. 06010103150

4.1 BACKGROUND. This chapter is organized by HUC-11 subwatershed, and the description of each subwatershed is divided into four parts:

- i. General description of the subwatershed
- ii. Description of point source contributions
- ii.a. Description of facilities discharging to water bodies listed on the 1998 303(d) list
- iii. Description of nonpoint source contributions

Information for this chapter was obtained from databases maintained by the Division of Water Pollution Control or provided in the WCS (Watershed Characterization System) data set. The WCS used was version 1.1 beta (developed by Tetra Tech, Inc for EPA Region 4) released in 2000.

WCS integrates with ArcView® v3.1 and Spatial Analyst® v1.1 to analyze user-delineated (sub)watersheds based on hydrologically connected water bodies. Reports are generated by integrating WCS with Microsoft® Word. Land Use/Land Cover information from 1992 MRLC (Multi-Resolution Land Cover) data are calculated based on the proportion of county-based land use/land cover in user-delineated (sub)watersheds. Nonpoint source data in WCS are based on data collected 1992–1998; nonpoint source data were reviewed by Tennessee NRCS staff.

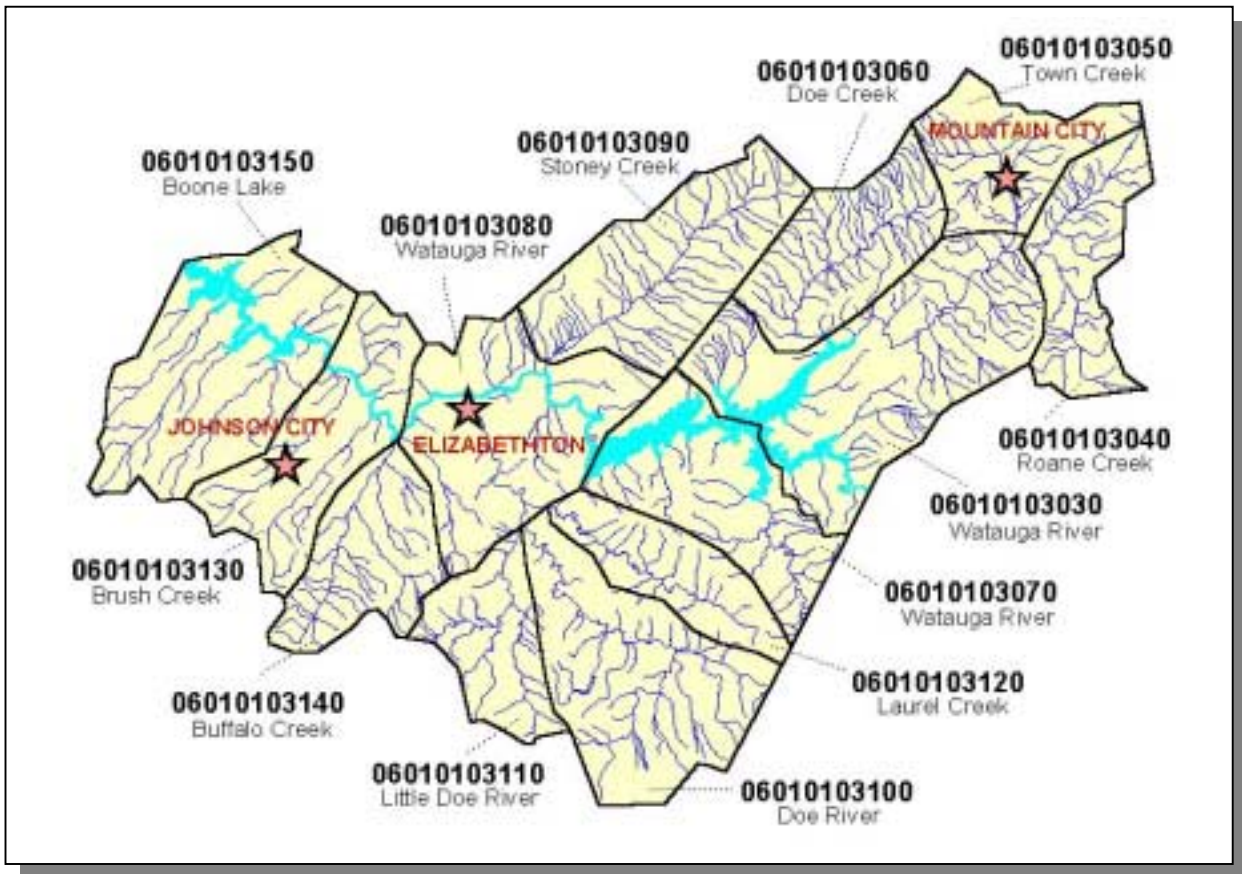


Figure 4-1. The Watauga River Watershed is Composed of Thirteen USGS-Delineated Subwatersheds (11-Digit Subwatersheds). Locations of Watauga River, Elizabethton, Johnson City, and Mountain City are shown for reference.

4.2. CHARACTERIZATION OF HUC-11 SUBWATERSHEDS. The Watershed Characterization System (WCS) software and data sets provided by EPA Region 4 were used to characterize each subwatershed in the Watauga River Watershed. HUC-14 polygons were aggregated to form the HUC-11 boundaries for data analysis.

HUC-11	HUC-14
06010103030	06010103010040 (Roane Creek) 06010103020050 (Watauga River)
06010103040	06010103010010 (Roane Creek)
06010103050	06010103010020 (Town Creek)
06010103060	06010103010030 (Doe Creek)
06010103070	06010103020060 (Watauga River) 06010103030020 (Elk River)
06010103080	06010103040060 (Doe River) 06010103050010 (Watauga River)
06010103090	06010103050020 (Stoney Creek)
06010103100	06010103040010 (Buck Creek) 06010103040020 (Doe River) 06010103040030 (Doe River)
06010103110	06010103040040 (Little Doe River)
06010103120	06010103040050 (Laurel Creek)
06010103130	06010103050040 (Sinking Creek) 06010103050050 (Brush Creek)
06010103140	06010103050030 (Buffalo Creek)
06010103150	06010103050060 (Boone Lake) 06010103050070 (Knob Creek) 06010103050080 (Boones Creek)

Table 4-1. HUC-14 Drainage Areas are Nested Within HUC-11 Drainages. USGS delineated the HUC-11 drainage areas. NRCS inventories and manages the physical database for HUC-14 drainage areas.

4.2.A. 06010103030.

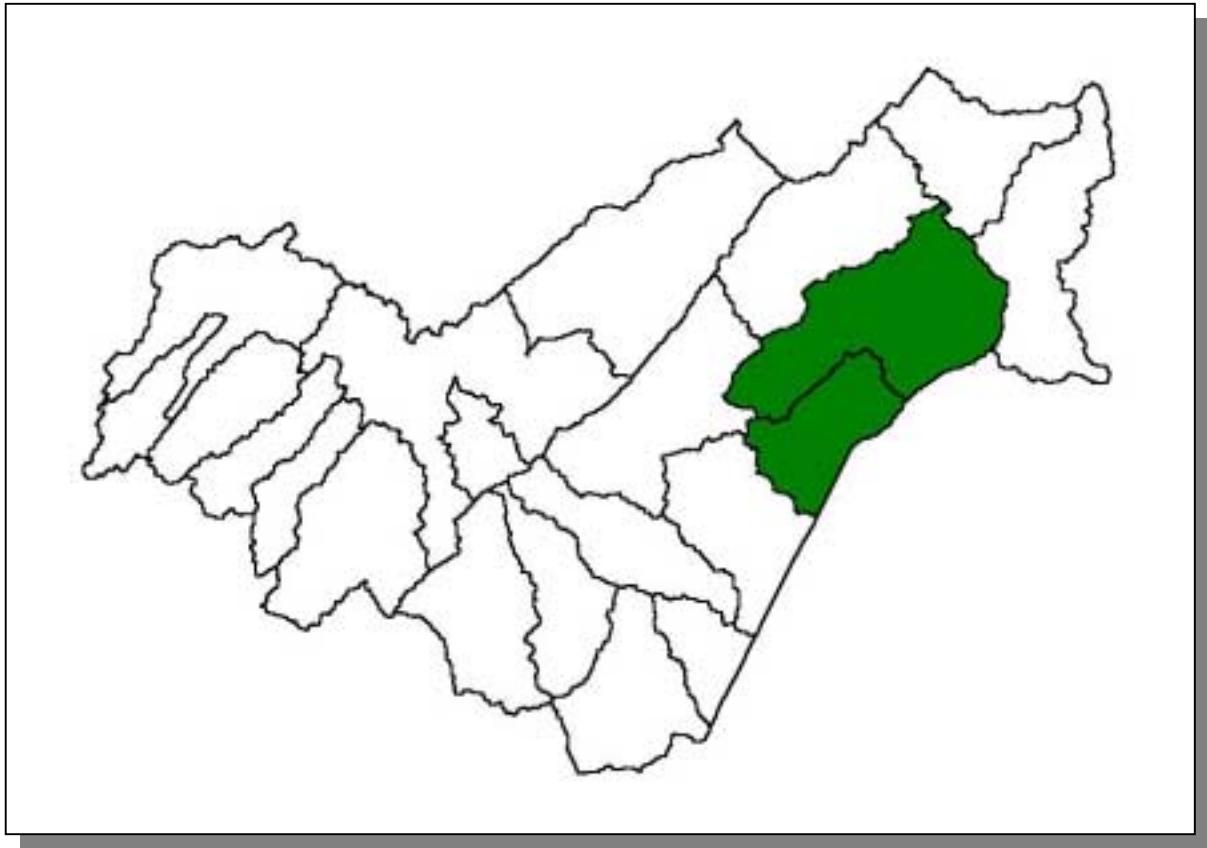


Figure 4-2. Location of Subwatershed 06010103030. All Watauga HUC-14 subwatershed boundaries are shown for reference.

4.2.A.i. General Description.

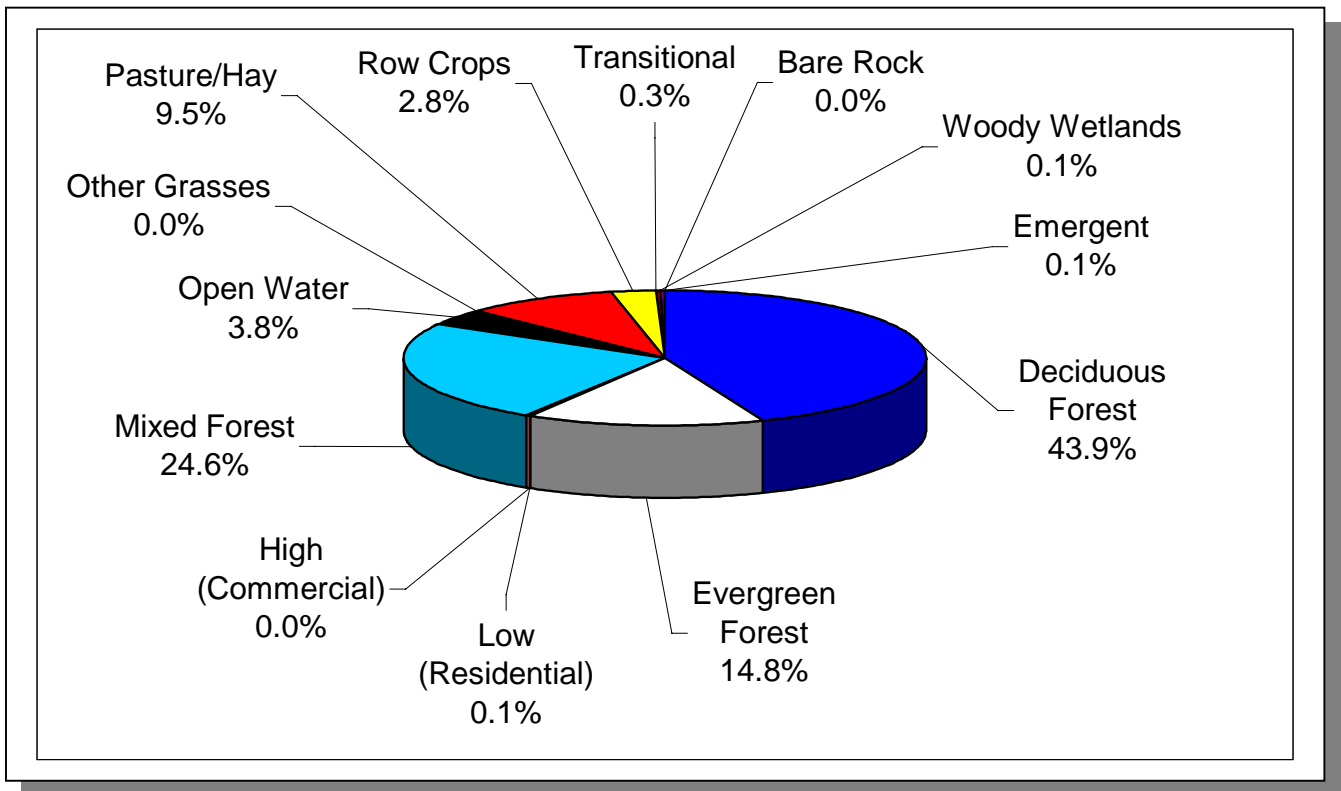


Figure 4-3. Land Use Distribution in Subwatershed 06010103030. More information is provided in Watauga-Appendix IV.

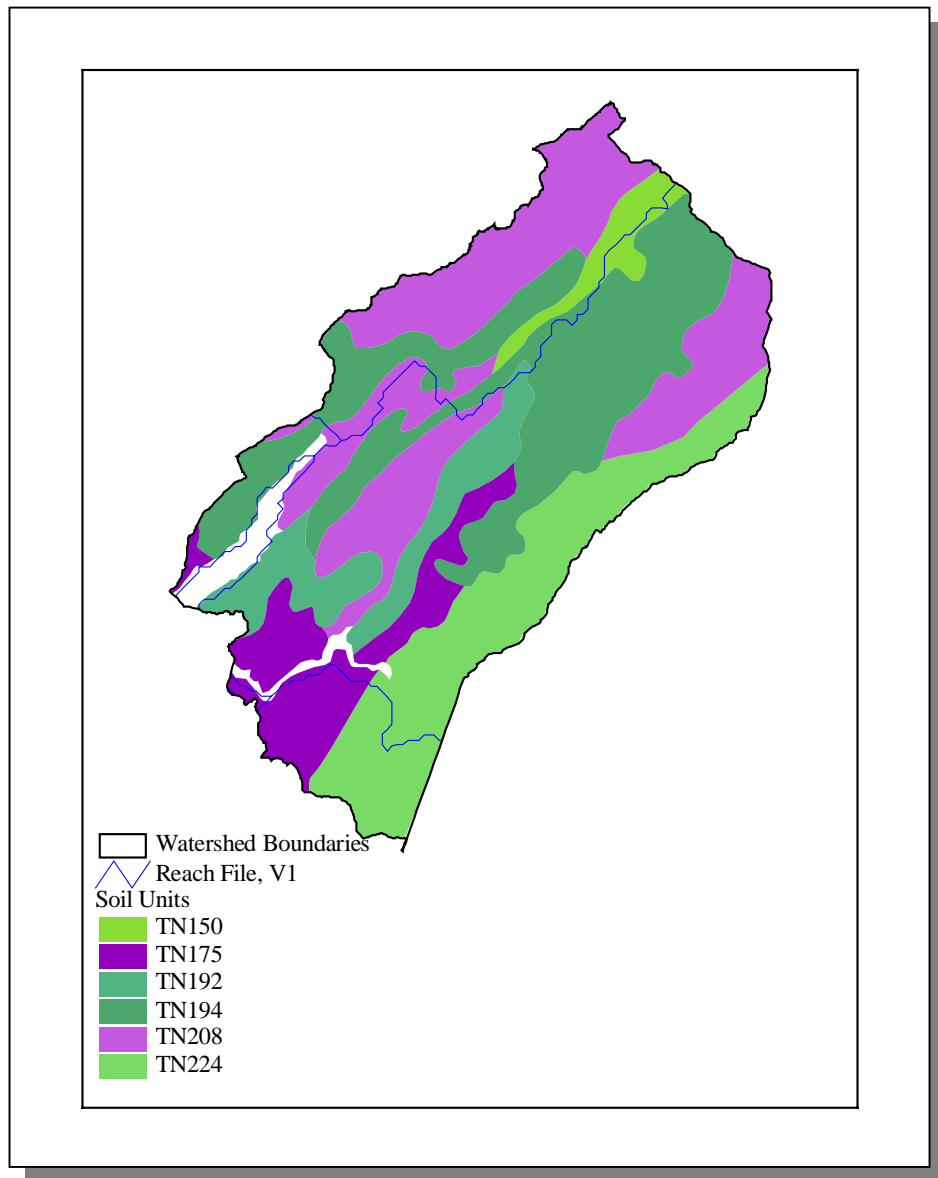


Figure 4-4. STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 06010103030.

STATSGO MAP UNIT ID	PERCENT HYDRIC	HYDROLOGIC GROUP	PERMEABILITY (in/hour)	SOIL pH	ESTIMATED SOIL TEXTURE	SOIL ERODIBILITY
TN150	6.00	C	1.68	5.63	Silty Loam	0.32
TN175	0.00	B	1.49	5.23	Loam	0.30
TN192	0.00	B	2.72	4.41	Sandy Loam	0.27
TN194	0.00	B	3.75	5.44	Loam	0.28
TN208	0.00	C	4.02	4.84	Loam	0.25
TN224	1.00	B	3.97	5.27	Loam	0.24

Table 4-2. Soil Characteristics by STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 06010103030. More details are provided in Watauga-Appendix IV.

	COUNTY POPULATION			ESTIMATED POPULATION IN WATERSHED		% CHANGE
County	1990	1997 Est.	Portion of Watershed (%)	1990	1997	
Carter	51,505	53,132	0.21	106	109	2.8
Johnson	13,766	16,572	25.59	3,522	4,240	20.4
Totals	65,271	69,704		3,628	4,349	19.9

Table 4-3. Population Estimates in Subwatershed 06010103030.

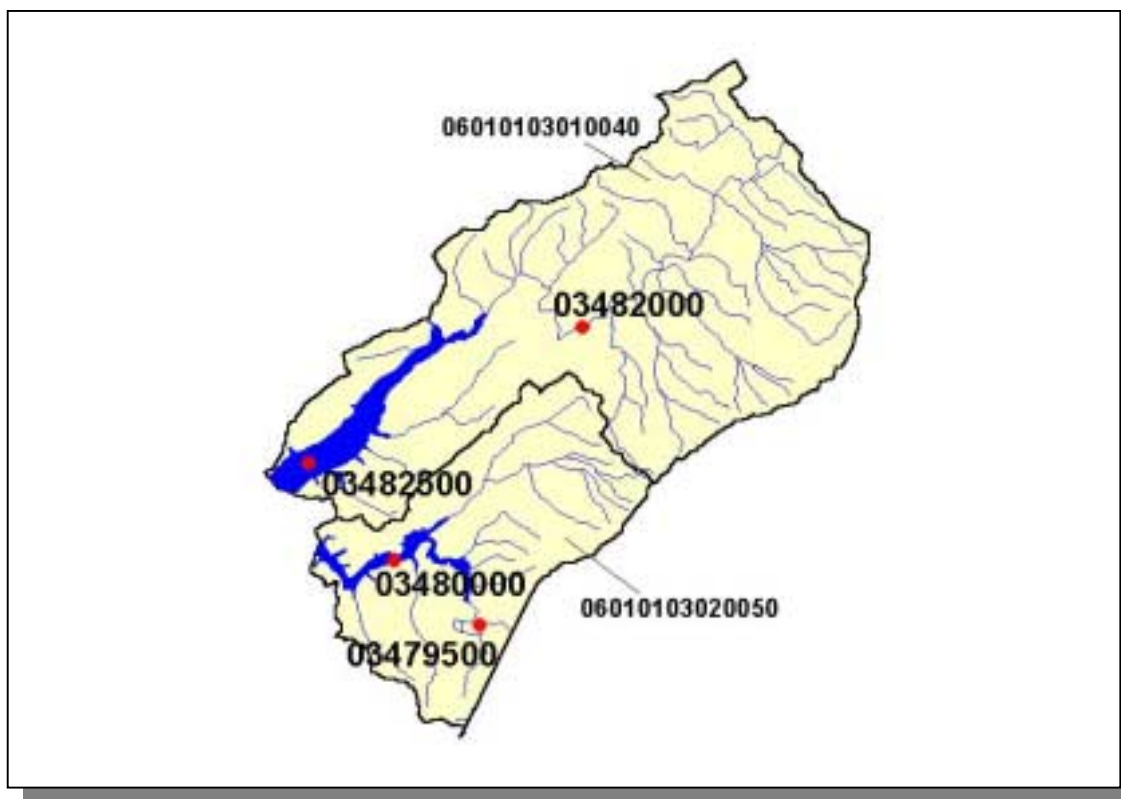


Figure 4-5. Location of Historical Streamflow Data Collection Sites In Subwatershed 06010103030. Subwatershed 06010103010040 and 06010103020050 boundaries are shown for reference. More information is provided in Watauga-Appendix IV.

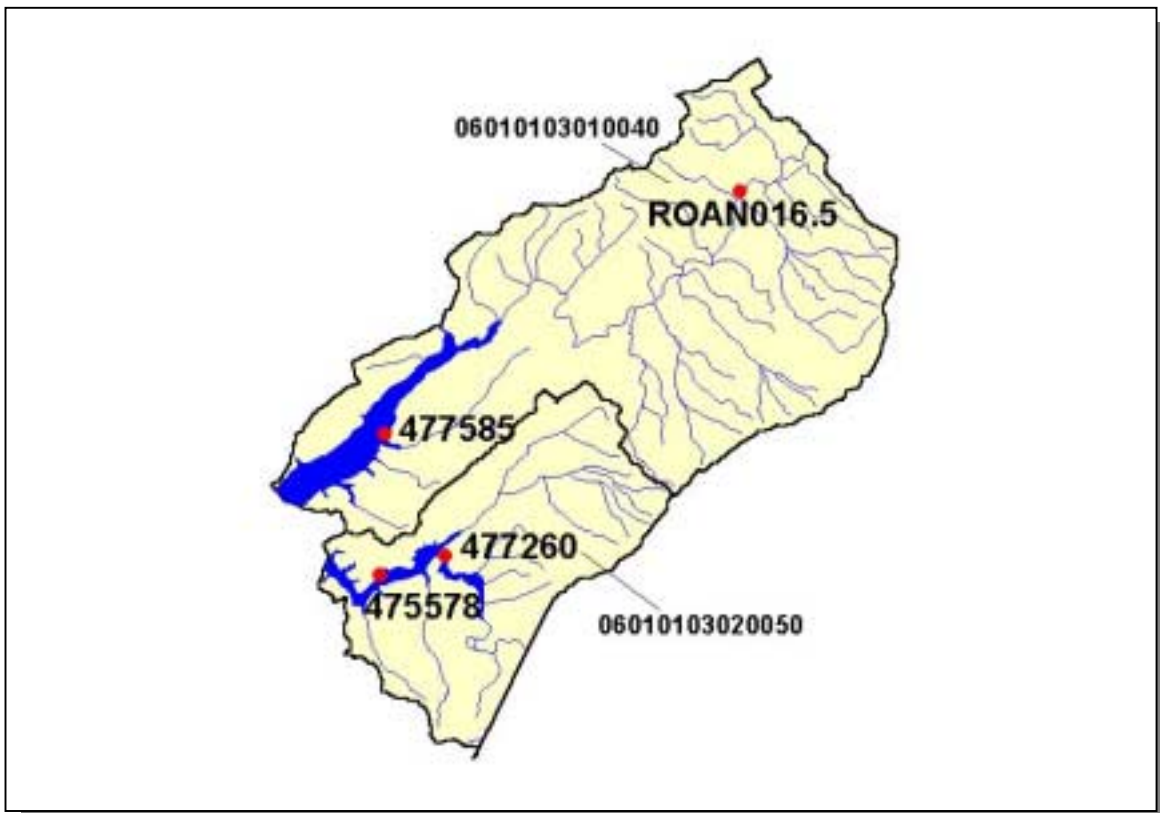


Figure 4-6. Location of STORET Monitoring Sites in Subwatershed 06010103030. Subwatershed 06010103010040 and 06010103020050 boundaries are shown for reference. More information is provided in Watauga-Appendix IV.

4.2.A.ii Point Source Contributions.



Figure 4-7. Location of Active Point Source Facilities (Individual Permits) in Subwatershed 06010103030. Subwatershed 06010103010040 and 06010103020050 boundaries are shown for reference. More information, including the names of facilities, is provided in Watauga-Appendix IV.

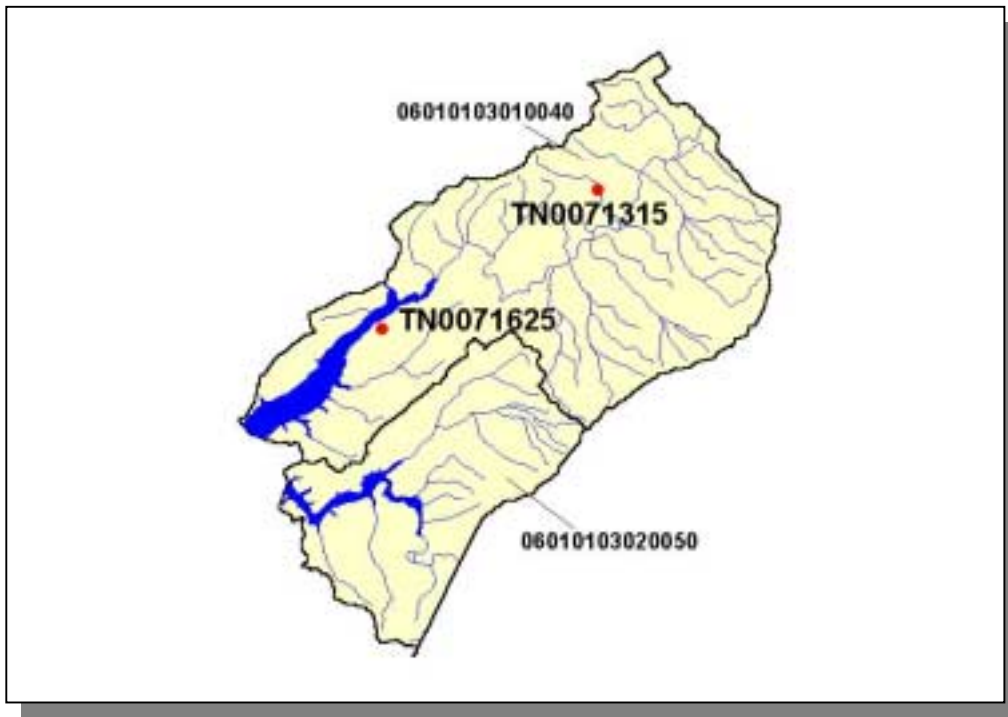


Figure 4-8. Location of Active Mining Sites in Subwatershed 06010103030. More information, including the names of facilities, is provided in Watauga-Appendix IV.

4.2.A.iii. Nonpoint Source Contributions.

LIVESTOCK (COUNTS)					
Beef Cow	Cattle	Milk Cow	Chickens	Hogs	Sheep
1,095	2,618	127	<5	19	41

Table 4-4. Summary of Livestock Count Estimates in Subwatershed 06010103030.
According to the Census of Agriculture, "Cattle" includes heifers, heifer calves, steers, bulls and bull calves.

County	INVENTORY		REMOVAL RATE	
	Forest Land (thousand acres)	Timber Land (thousand acres)	Growing Stock (million cubic feet)	Sawtimber (million board feet)
Carter	161.3	155.5	3.4	12.4
Johnson	144.4	144.4	0.6	2.2
Total	305.7	299.9	4.0	14.6

Table 4-5. Forest Acreage and Annual Removal Rates (1987-1994) in Subwatershed 06010103030.

CROP	TONS/ACRE/YEAR
Non Agricultural Land Use	0.00
Grass (Hayland)	0.40
Grass (Pastureland)	0.58
Grass, Forbs, Legumes (Mixed Pasture)	0.26
Forest Land (Grazed)	0.00
Forest Land (Not Grazed)	0.00
Farmsteads and Ranch Headquarters	0.21
Corn (Row Crops)	4.76
Tobacco (Row Crops)	3.33
Legume Grass (Hayland)	0.03
Other Cropland Not Planted	0.12

Table 4-6. Annual Estimated Total Soil Loss in Subwatershed 06010103030.

4.2.B. 06010103040.

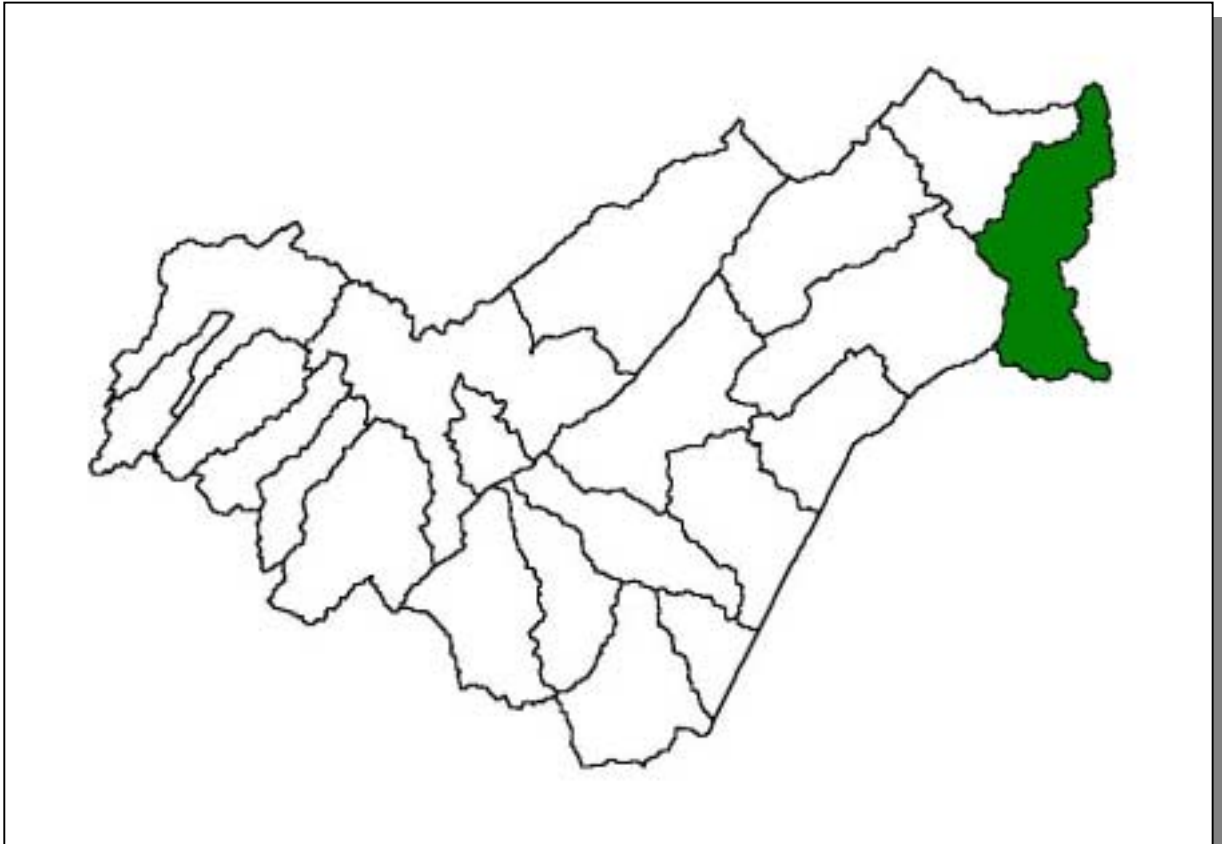


Figure 4-9. Location of Subwatershed 06010103040. All Watauga HUC-14 subwatershed boundaries are shown for reference.

4.2.B.i. General Description.

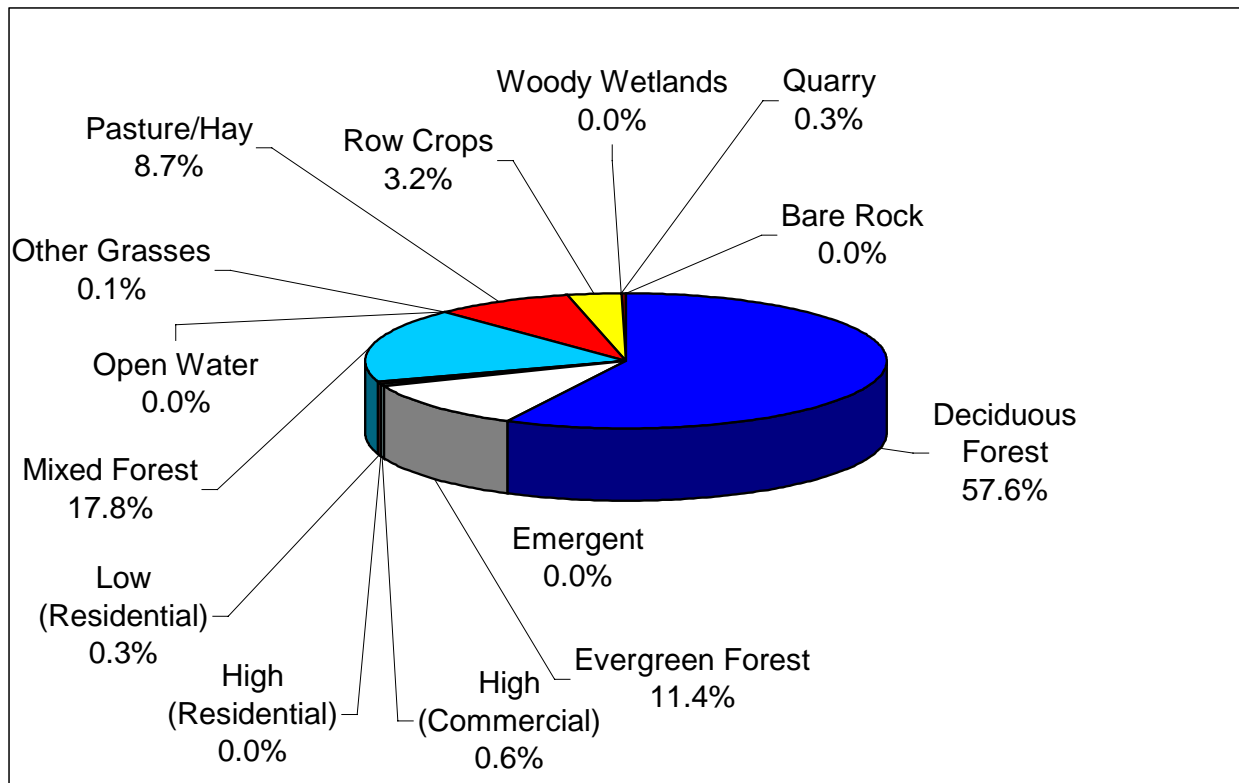


Figure 4-10. Land Use Distribution in Subwatershed 06010103040. More information is provided in Watauga-Appendix IV.

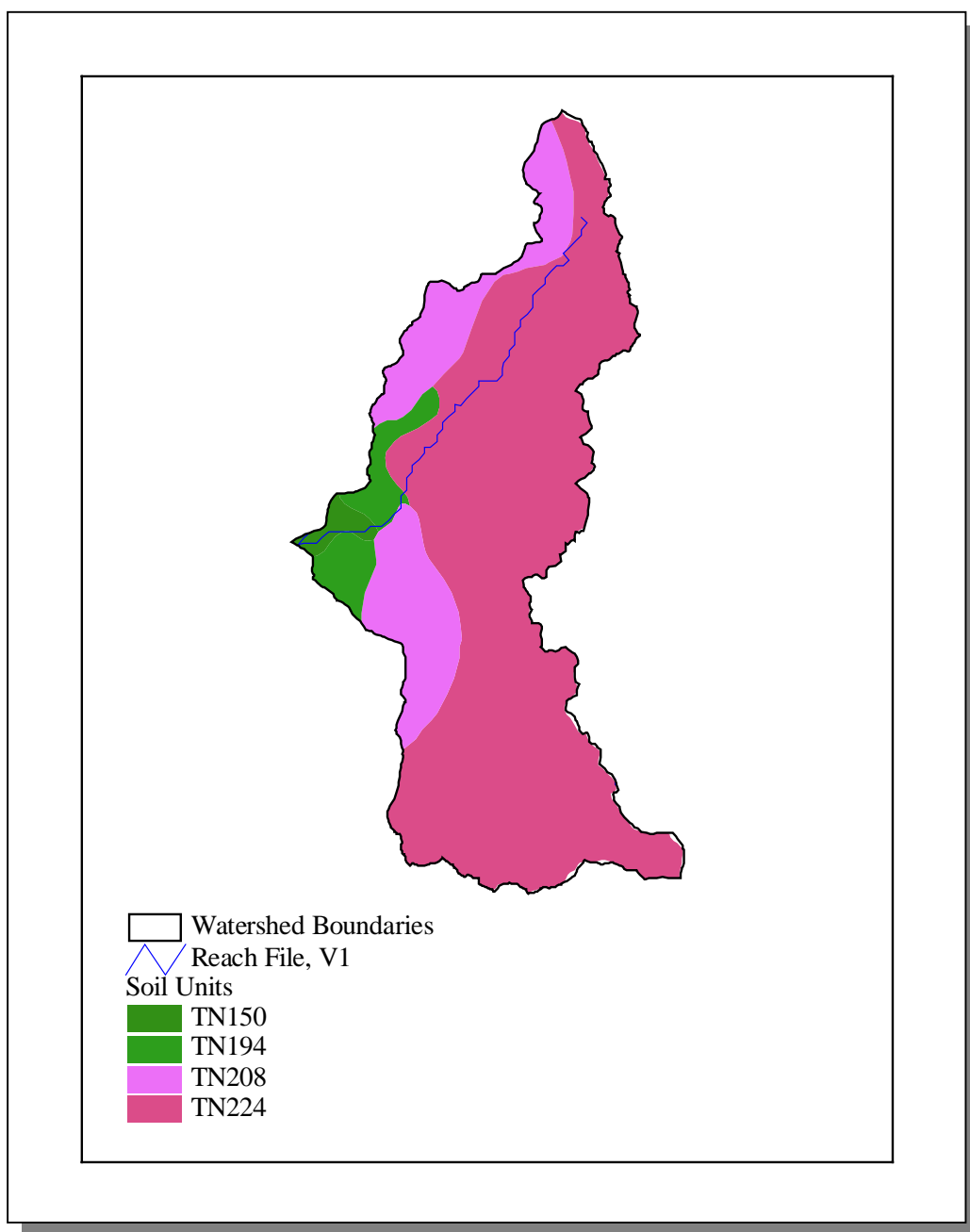


Figure 4-11. STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 06010103040.

STATSGO MAP UNIT ID	PERCENT HYDRIC	HYDROLOGIC GROUP	PERMEABILITY (in/hour)	SOIL pH	ESTIMATED SOIL TEXTURE	SOIL ERODIBILITY
TN150	6.00	C	1.68	5.63	Silty Loam	0.32
TN194	0.00	B	3.75	5.44	Loam	0.28
TN208	0.00	C	4.02	4.84	Loam	0.25
TN224	1.00	B	3.97	5.27	Loam	0.24

Table 4-7. Soil Characteristics by STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 06010103040. More information is provided in Watauga-Appendix IV.

	COUNTY POPULATION			ESTIMATED POPULATION IN WATERSHED		% CHANGE
County	1990	1997 Est.	Portion of Watershed (%)	1990	1997	
Johnson	13,766	16,572	12.15	1,673	2,104	20.4

Table 4-8. Population Estimates in Subwatershed 06010103040.

Populated Place	County	Population	NUMBER OF HOUSING UNITS			
			Total	Public Sewer	Septic Tank	Other
Mountain City	Johnson	2,169	1,050	873	174	3

Table 4-9. Housing and Sewage Disposal Practices of Select Communities in Subwatershed 06010103040.



Figure 4-12. Location of STORET Monitoring Sites in Subwatershed 06010103040. More information is provided in Watauga-Appendix IV.

4.2.B.ii. Point Source Contributions.



Figure 4-13. Location of Active Mining Sites in Subwatershed 06010103040 More information, including the names of facilities, is provided in Watauga-Appendix IV.

4.2.B.iii. Nonpoint Source Contributions.

LIVESTOCK (COUNTS)					
Beef Cow	Cattle	Milk Cow	Chickens	Hogs	Sheep
604	1,454	58	<5	11	30

Table 4-10. Summary of Livestock Count Estimates in Subwatershed 06010103040.
According to the Census of Agriculture, "Cattle" includes heifers, heifer calves, steers, bulls and bull calves.

County	INVENTORY		REMOVAL RATE	
	Forest Land (thousand acres)	Timber Land (thousand acres)	Growing Stock (million cubic feet)	Sawtimber (million board feet)
Johnson	144.4	144.4	0.6	2.2

Table 4-11. Forest Acreage and Average Annual Removal Rates (1987-1994) in Subwatershed 06010103040.

CROPS	TONS/ACRE/YEAR
Non Agricultural Land Use	0.00
Grass (Hayland)	0.41
Grass (Pastureland)	0.58
Grass, Forbs, Legumes (Mixed Pasture)	0.26
Forest Land (Grazed)	0.00
Forest Land (Not Grazed)	0.00
Farmsteads and Ranch Headquarters	0.21
Corn (Row Crops)	4.76
Tobacco (Row Crops)	3.25
Legume Grass (Hayland)	0.03
Other Cropland not Planted	0.12

Table 4-12. Annual Estimated Total Soil Loss in Subwatershed 06010103040.

4.2.C. 06010103050.

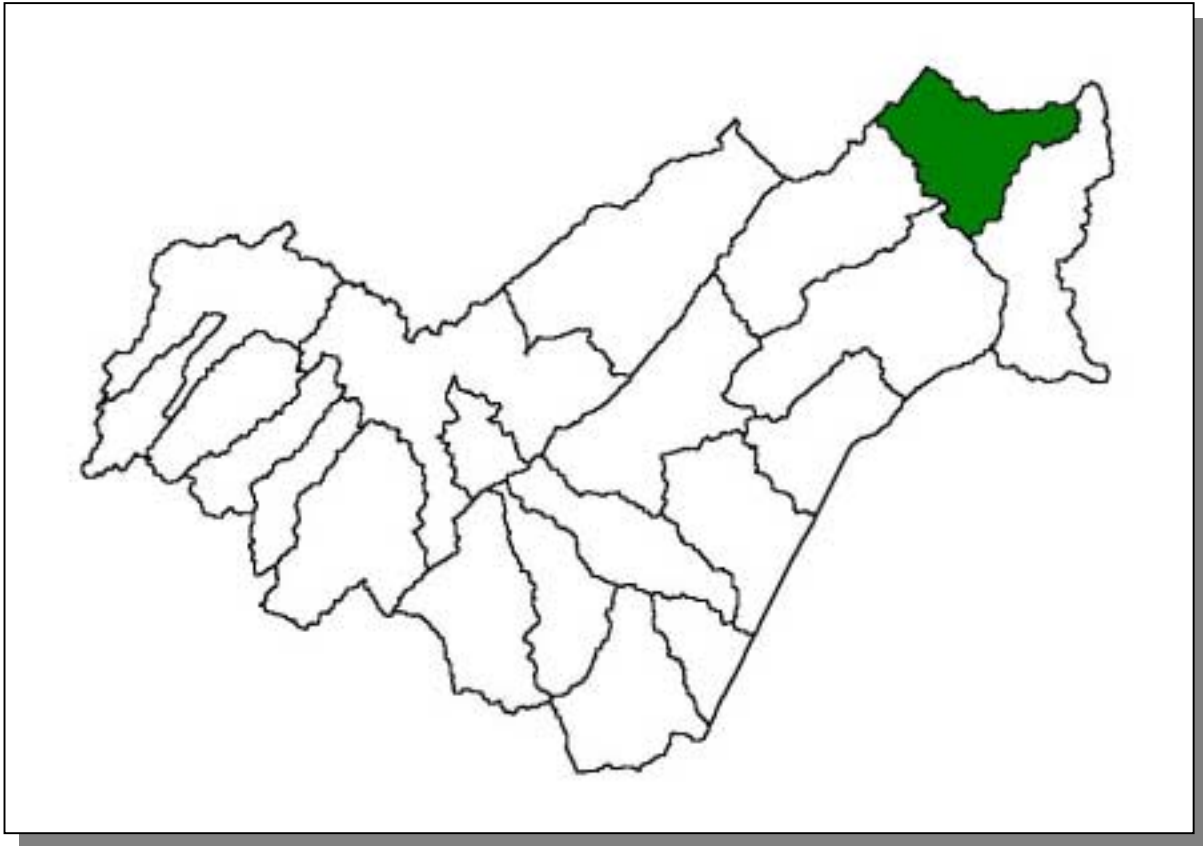


Figure 4-14. Location of Subwatershed 06010103050. All Watauga HUC-14 subwatershed boundaries are shown for reference.

4.2.C.i. General Description.

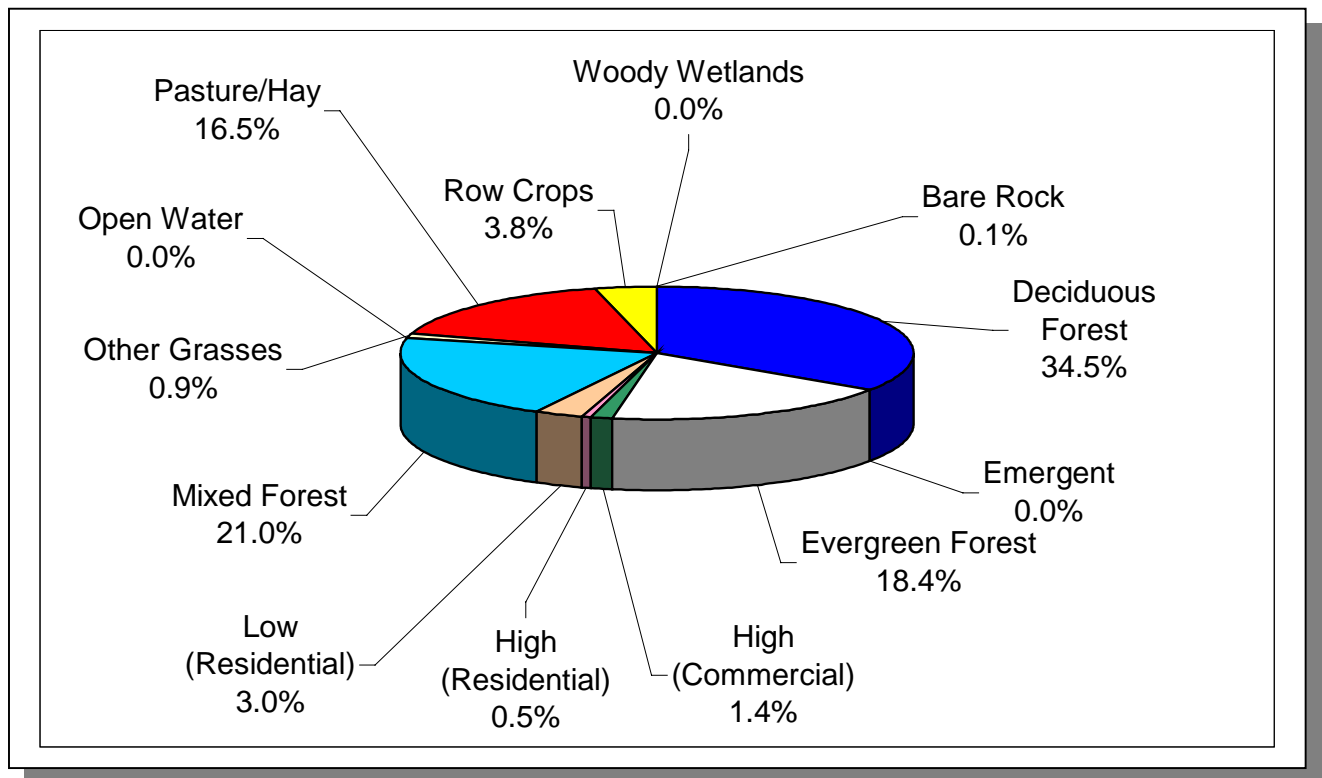


Figure 4-15. Land Use Distribution in Subwatershed 06010103050. More information is provided in Watauga-Appendix IV.

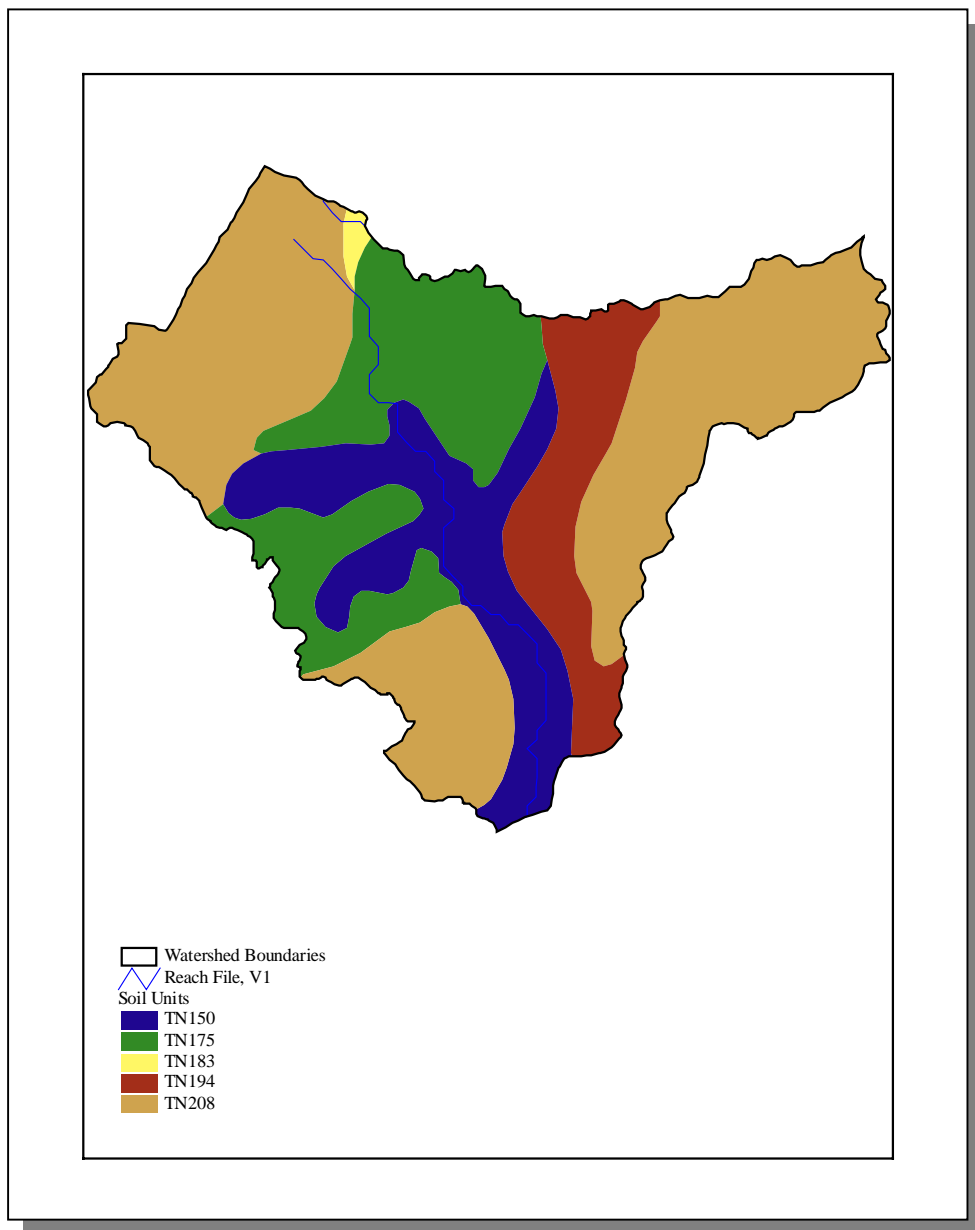


Figure 4-16. STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 06010103050.

STATSGO MAP UNIT ID	PERCENT HYDRIC	HYDROLOGIC GROUP	PERMEABILITY (in/hour)	SOIL pH	ESTIMATED SOIL TEXTURE	SOIL ERODIBILITY
TN150	6.00	C	1.68	5.63	Silty Loam	0.32
TN175	0.00	B	1.49	5.23	Loam	0.30
TN183	0.00	B	4.45	5.04	Sandy Loam	0.21
TN194	0.00	B	3.75	5.44	Loam	0.28
TN208	0.00	C	4.02	4.84	Loam	0.25

Table 4-13. Soil Characteristics by STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 06010103050. More information is provided in Watauga-Appendix IV.

	COUNTY POPULATION			ESTIMATED POPULATION IN WATERSHED		% CHANGE
County	1990	1997 Est.	Portion of Watershed (%)	1990	1997	
Johnson	47,091	13,766	9.7	1,336	1,608	20.4

Table 4-14. Population Estimates in Subwatershed 06010103050.

Populated Place	County	Population	NUMBER OF HOUSING UNITS			
			Total	Public Sewer	Septic Tank	Other
Mountain City	Johnson	2,169	1,050	873	174	3

Table 4-15. Housing and Sewage Disposal Practices of Select Communities in Subwatershed 06010103050.

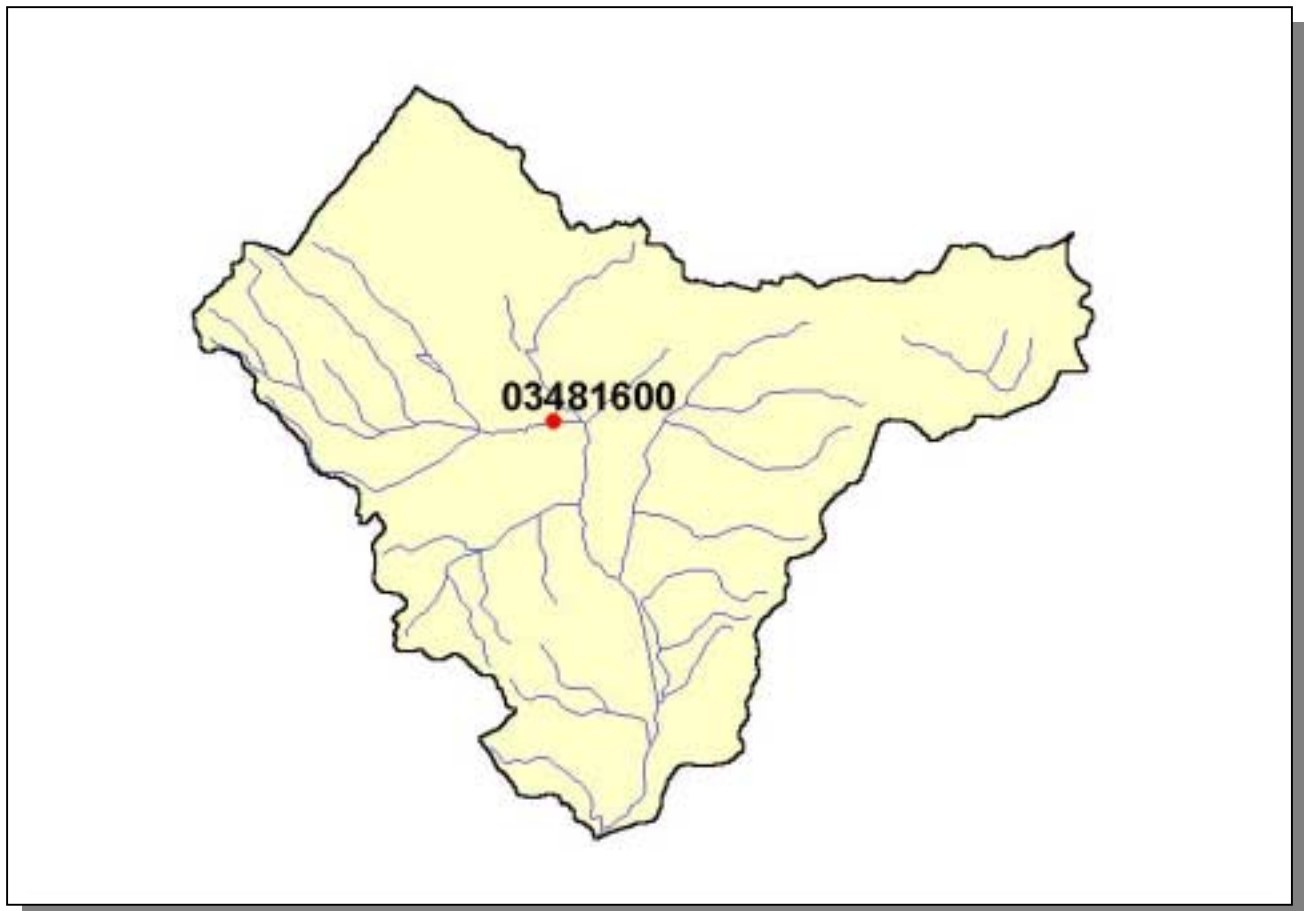


Figure 4-17. Location of Historical Streamflow Data Collection Sites In Subwatershed 06010103050. More information is provided in Watauga-Appendix IV.



Figure 4-18. Location of STORET Monitoring Sites in Subwatershed 06010103050. More information is provided in Watauga-Appendix IV.

4.2.C.ii. Point Source Contributions.



Figure 4-19. Location of Active Point Source Facilities (Individual Permits) in Subwatershed 06010103050. More information, including the names of facilities, is provided in Watauga-Appendix IV.

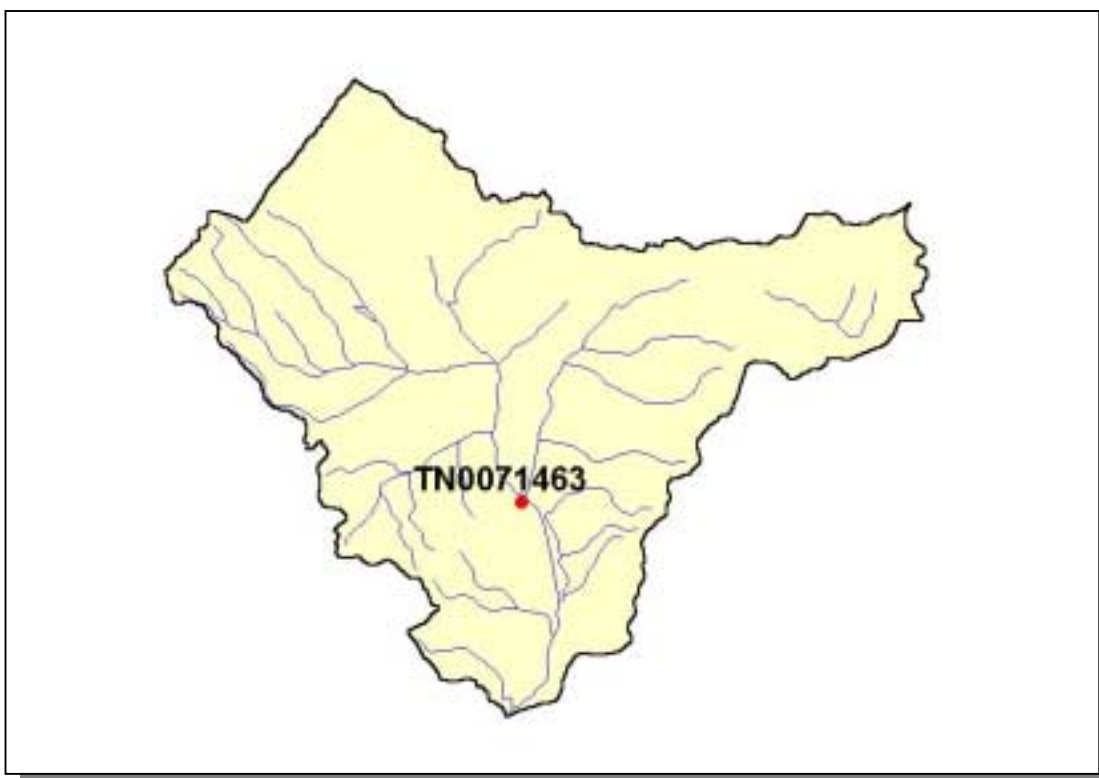


Figure 4-20. Location of Active Mining Sites in Subwatershed 06010103050. More information, including the names of facilities, is provided in Watauga-Appendix IV.

4.2.C.iii. Nonpoint Source Contributions.

LIVESTOCK (COUNTS)					
Beef Cow	Cattle	Milk Cow	Chickens	Hogs	Sheep
713	1,705	83	<5	12	27

Table 4-16. Summary of Livestock Count Estimates in Subwatershed 06010103050.
According to the Census of Agriculture, "Cattle" includes heifers, heifer calves, steers, bulls and bull calves.

County	INVENTORY		REMOVAL RATE	
	Forest Land (thousand acres)	Timber Land (thousand acres)	Growing Stock (million cubic feet)	Sawtimber (million board feet)
Johnson	144.4	144.4	0.6	2.2

Table 4-17. Forest Acreage and Average Annual Removal Rates (1987-1994) in Subwatershed 06010103050.

CROPS	TONS/ACRE/YEAR
Non Agricultural Land Use	0.00
Grass (Hayland)	0.41
Grass (Pastureland)	0.58
Grass, Forbs, Legumes (Mixed Pasture)	0.26
Forest Land (Grazed)	0.00
Forest Land (Not Grazed)	0.00
Farmsteads and Ranch Headquarters	0.21
Corn (Row Crops)	4.76
Tobacco (Row Crops)	3.25
Legume Grass (Hayland)	0.03
Other Cropland not Planted	0.12

Table 4-18. Annual Estimated Total Soil Loss in Subwatershed 06010103050.

4.2.D. 06010103060.

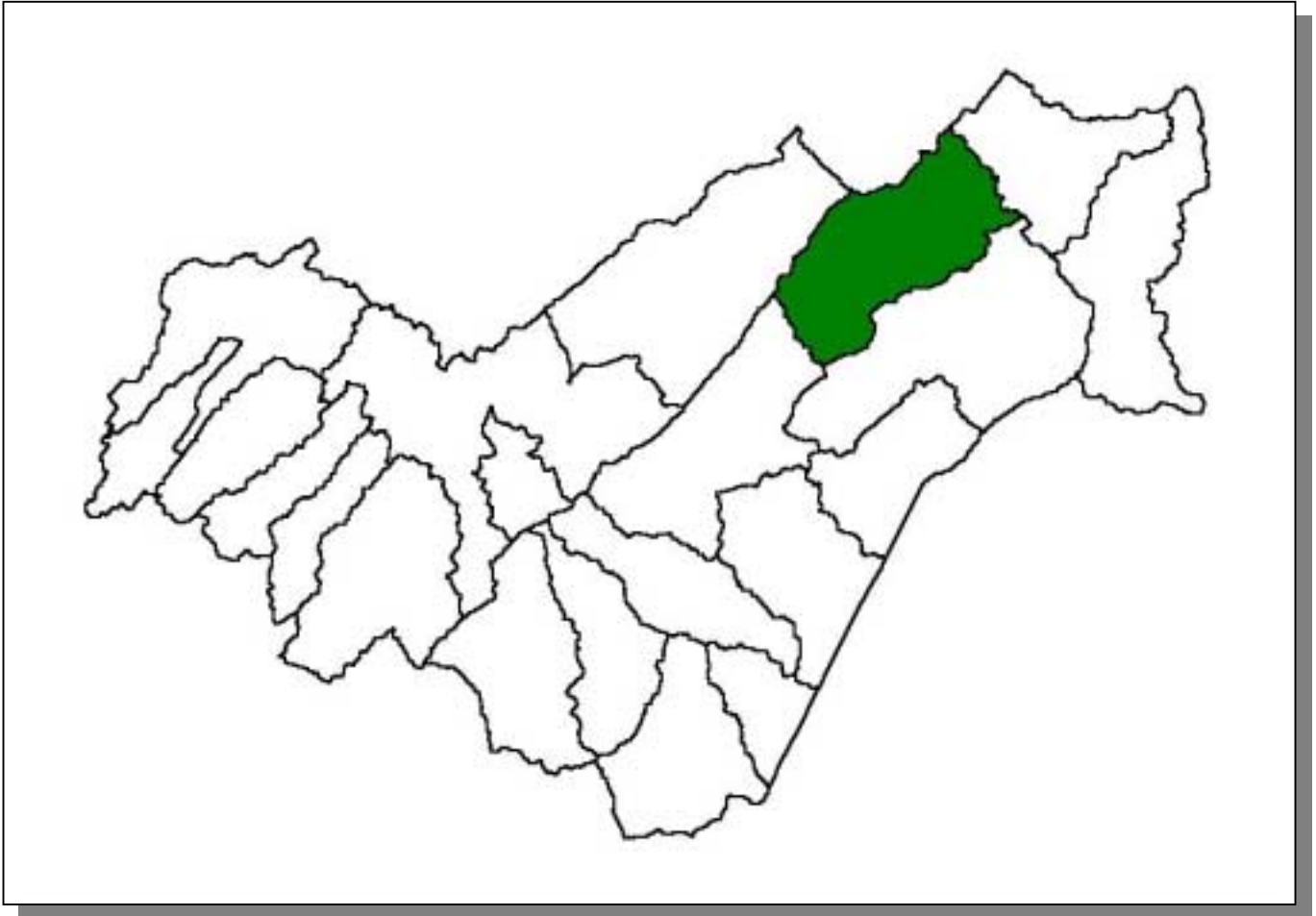


Figure 4-21. Location of Subwatershed 06010103060. All Watauga HUC-14 subwatershed boundaries are shown for reference.

4.2.D.i. General Description.

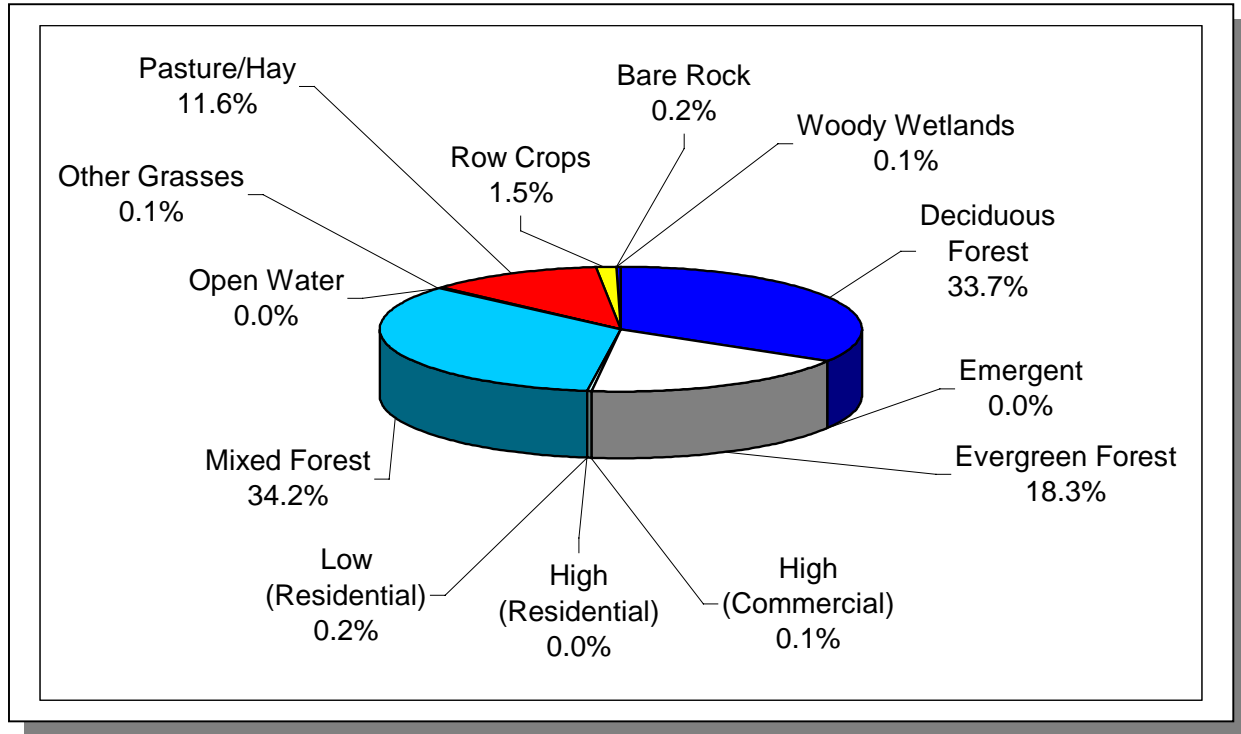


Figure 4-22. Land Use Distribution in Subwatershed 06010103060. More information is provided in Watauga-Appendix IV.

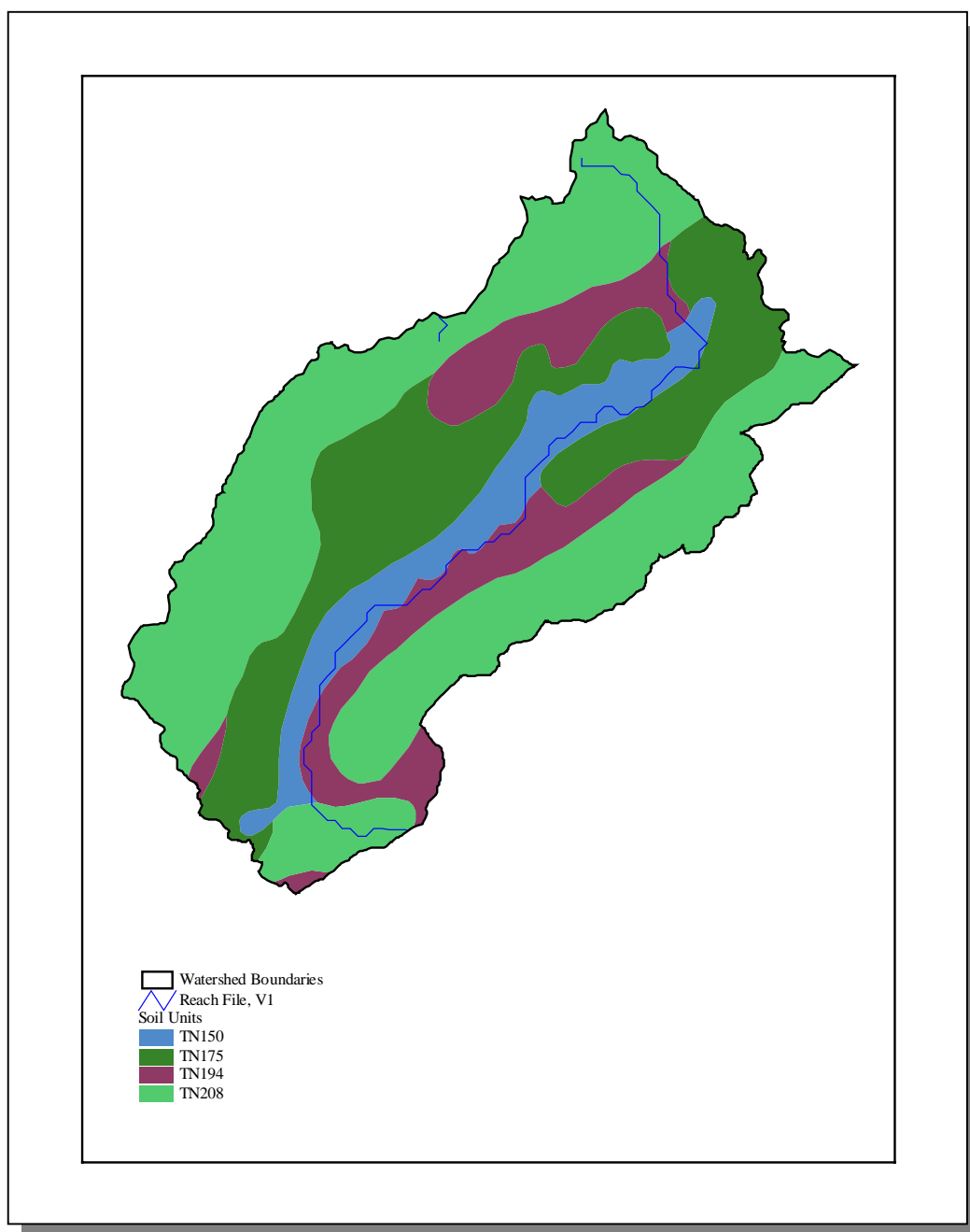


Figure 4-23. STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 06010103060.

STATSGO MAP UNIT ID	PERCENT HYDRIC	HYDROLOGIC GROUP	PERMEABILITY (in/hour)	SOIL pH	ESTIMATED SOIL TEXTURE	SOIL ERODIBILITY
TN150	6.00	C	1.68	5.63	Silty Loam	0.32
TN175	0.00	B	1.49	5.23	Loam	0.30
TN194	0.00	B	3.75	5.44	Loam	0.28
TN208	0.00	C	4.02	4.84	Loam	0.25

Table 4-19. Soil Characteristics by STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 06010103060. More information is provided in Watauga-Appendix IV.

	COUNTY POPULATION			ESTIMATED POPULATION IN WATERSHED		% CHANGE
County	1990	1997 Est.	Portion of Watershed (%)	1990	1997	
Carter	51,505	53,132	0.26	134	139	3.7
Johnson	13,766	16,572	13.58	1,869	2,250	20.4
Totals	65,271	69,704		2,003	2,389	19.3

Table 4-20. Population estimates in Subwatershed 06010103060.

4.2.D.ii. Point Source Contributions.



Figure 4-24. Location of Active Mining Sites in Subwatershed 06010103060. More information, including the names of facilities, is provided in Watauga-Appendix IV.

4.2.D.iii. Nonpoint Source Contributions.

LIVESTOCK (COUNTS)					
Beef Cow	Milk Cow	Cattle	Chickens	Hogs	Sheep
720	84	1,721	<5	12	27

Table 4-21. Summary of Livestock Count Estimates in Subwatershed 06010103060.
According to the Census of Agriculture, "Cattle" includes heifers, heifer calves, steers, bulls and bull calves.

County	INVENTORY		REMOVAL RATE	
	Forest Land (thousand acres)	Timber Land (thousand acres)	Growing Stock (million cubic feet)	Sawtimber (million board feet)
Carter	161.3	155.5	3.4	12.4
Johnson	144.4	144.4	0.6	2.2
Totals	305.7	299.9	4.0	14.6

Table 4-22. Forest Acreage and Average Annual Removal Rates (1987-1994) in Subwatershed 06010103060.

CROPS	TONS/ACRE/YEAR
Non Agricultural Land Use	0.00
Grass (Hayland)	0.40
Grass (Pastureland)	0.58
Grass, Forbs, Legumes (Mixed Pasture)	0.26
Forest Land (Grazed)	0.00
Forest Land (Not Grazed)	0.00
Farmsteads and Ranch Headquarters	0.21
Corn (Row Crops)	4.77
Tobacco (Row Crops)	3.45
Legume Grass (Hayland)	0.04
Other Cropland not Planted	0.12

Table 4-23. Annual Soil Loss in Subwatershed 06010103060.

4.2.E. 06010103070.

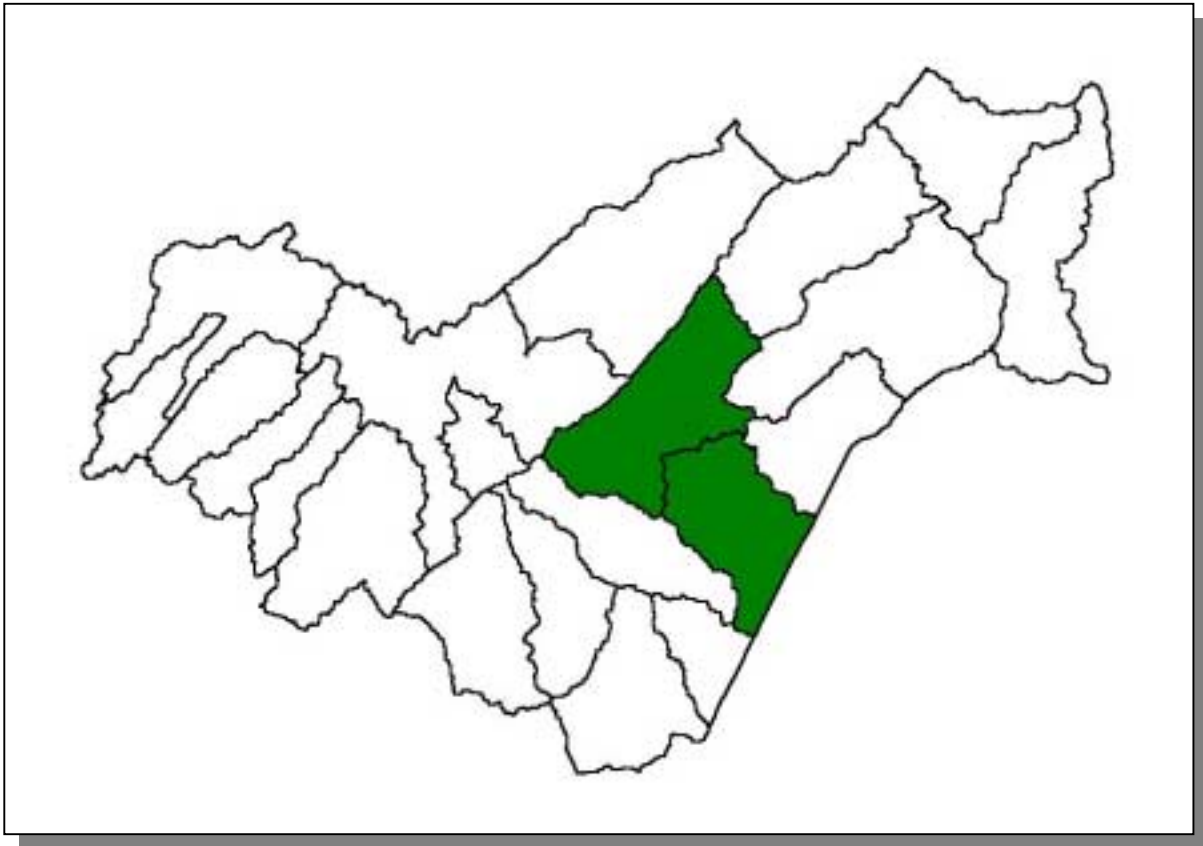


Figure 4-25. Location of Subwatershed 06010103070. All Watauga HUC-14 subwatershed boundaries are shown for reference.

4.2.E.i. General Description.

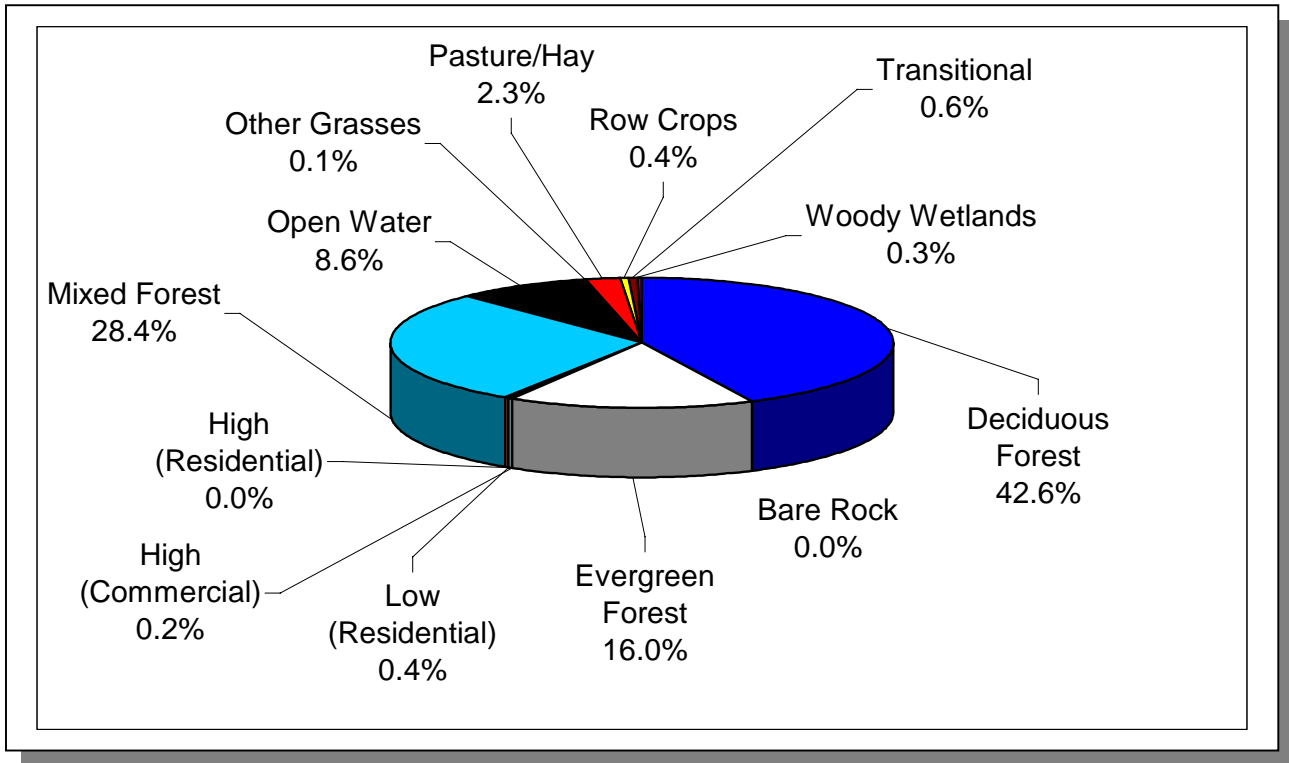


Figure 4-26. Land Use Distribution in Subwatershed 06010103070. More information is provided in Watauga-Appendix IV.

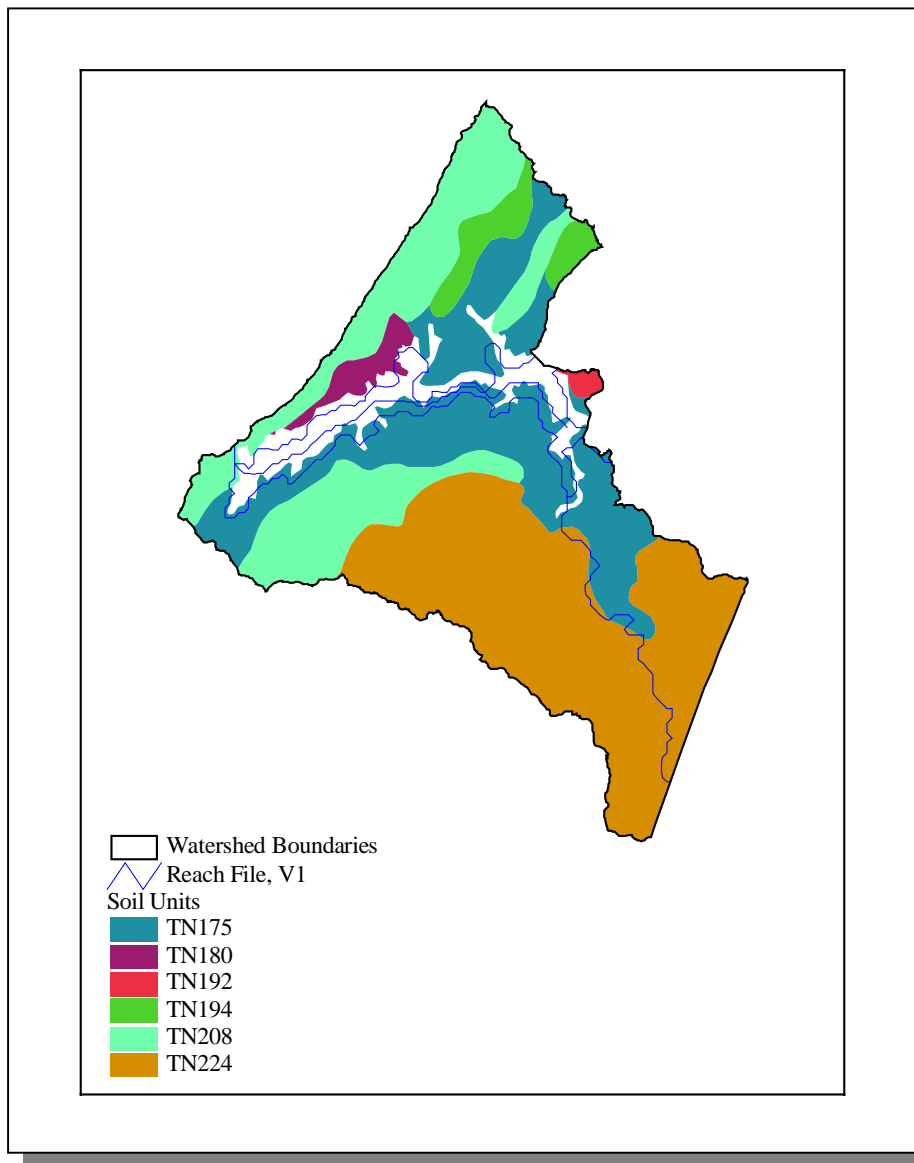


Figure 4-27. STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 06010103070.

STATSGO MAP UNIT ID	PERCENT HYDRIC	HYDROLOGIC GROUP	PERMEABILITY (in/hr)	SOIL pH	ESTIMATED SOIL TEXTURE	SOIL ERODIBILITY
TN175	0.00	B	1.49	5.23	Loam	0.30
TN180	0.00	B	1.71	4.97	Loam	0.28
TN192	0.00	B	2.72	4.41	Sandy Loam	0.27
TN194	0.00	B	3.75	5.44	Loam	0.28
TN208	0.00	C	4.02	4.84	Loam	0.25
TN224	1.00	B	3.97	5.27	Loam	0.24

Table 4-24. Soil Characteristics by STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 06010103070. More information is provided in Watauga-Appendix IV.

	COUNTY POPULATION			ESTIMATED POPULATION IN WATERSHED		% CHANGE
County Name	1990	1997 Est.	Portion of Watershed (%)	1990	1997	
Carter	51,505	53,132	16.87	8,690	8,964	3.2
Johnson	13,766	16,572	4.09	564	6,79	20.4
Totals	65,271	69,704		9,254	9,643	4.2

Table 4-25. Population Estimates in Subwatershed 06010103070.

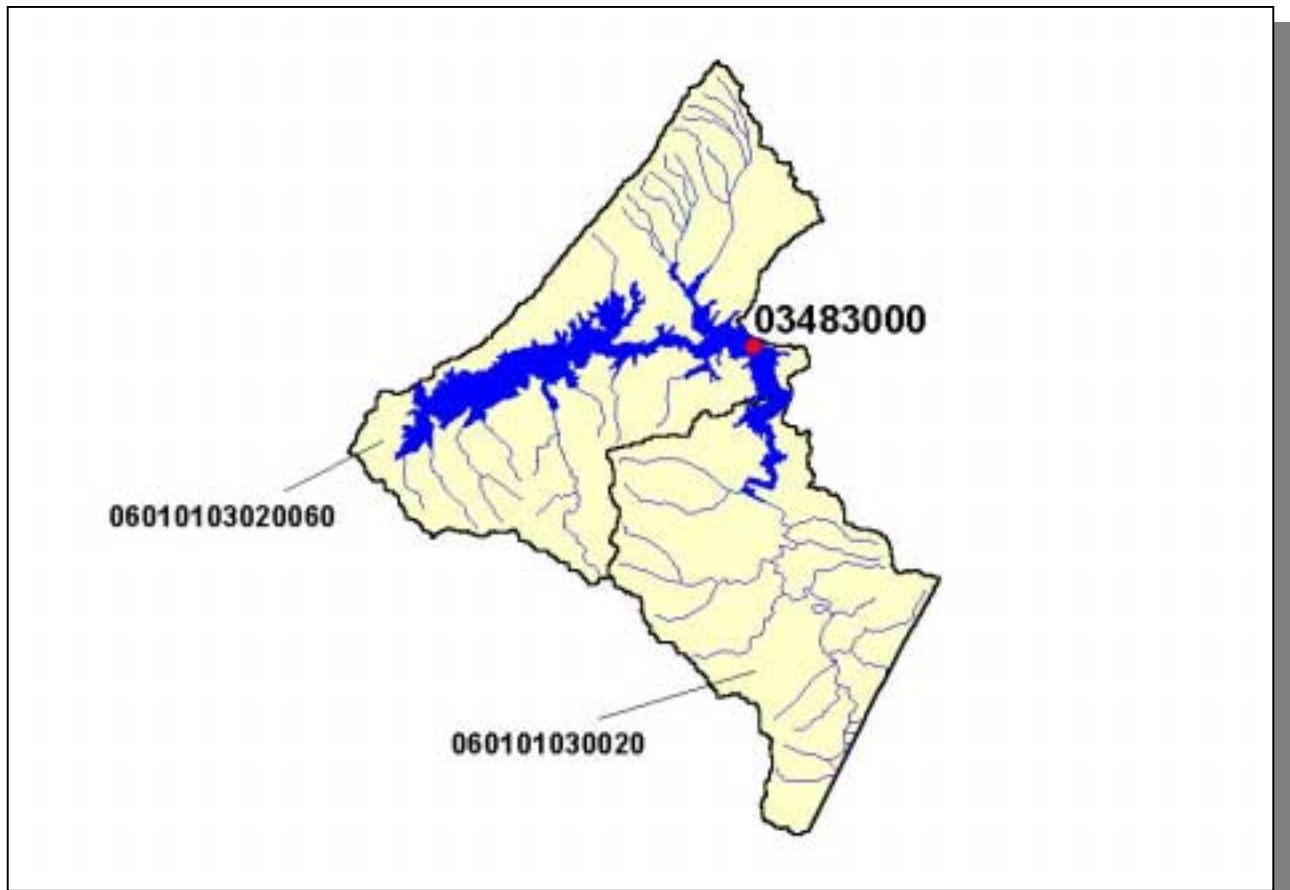


Figure 4-28. Location of Historical Streamflow Data Collection Sites In Subwatershed 06010103070. Subwatershed 06010103020060 and 06010103030020 boundaries are shown for reference. More information is provided in Watauga-Appendix IV.

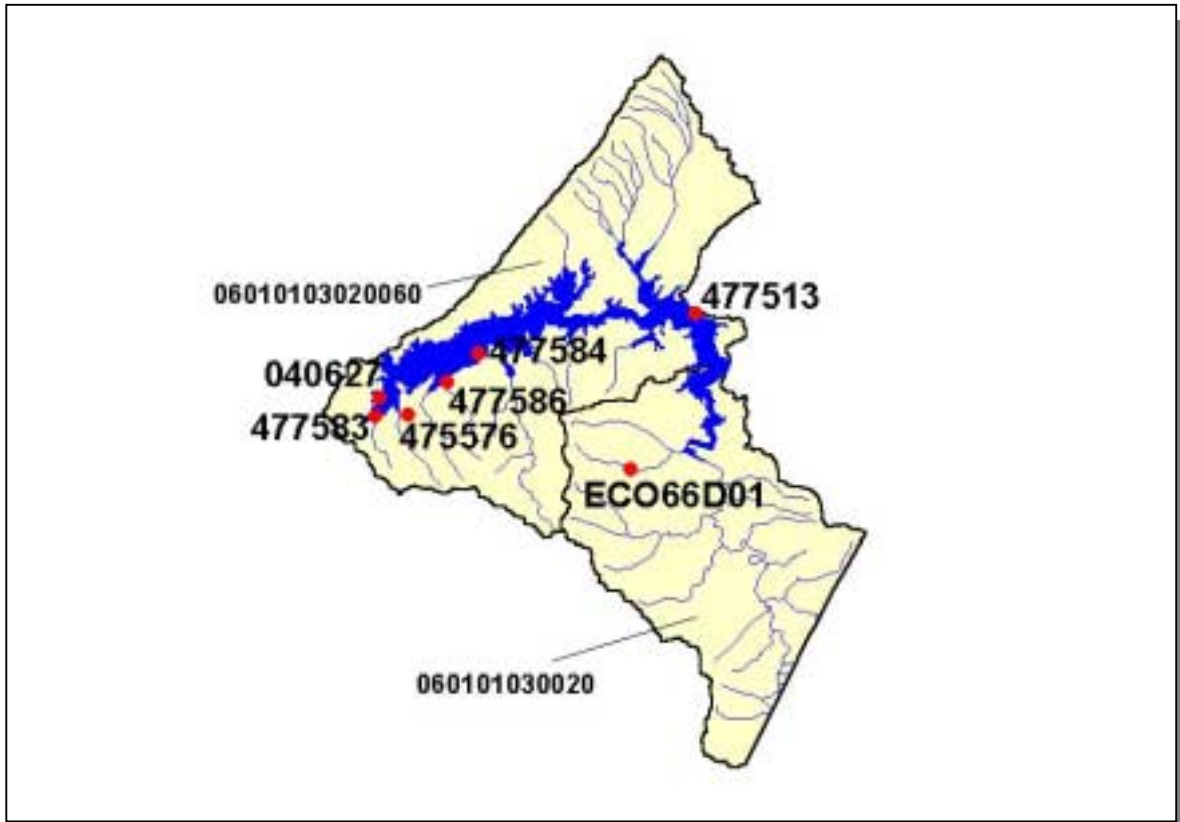


Figure 4-29. Location of STORET Monitoring Sites in Subwatershed 06010103070. Subwatershed 06010103020060 and 06010103030020 boundaries are shown for reference. More information is provided in Watauga-Appendix IV.

4.2.E.ii. Point Source Contributions.

No Contributions.

4.2.E.iii. Nonpoint Source Contributions.

LIVESTOCK (COUNTS)					
Beef Cow	Milk Cow	Cattle	Chickens	Hogs	Sheep
287	43	729	<5	<5	8

Table 4-26. Summary of Livestock Count Estimates in Subwatershed 06010103070.
According to the Census of Agriculture, "Cattle" includes heifers, heifer calves, steers, bulls and bull calves.

County	INVENTORY		REMOVAL RATE	
	Forest Land (thousand acres)	Timber Land (thousand acres)	Growing Stock (million cubic feet)	Sawtimber (million board feet)
Carter	161.3	155.5	3.4	12.4
Johnson	144.4	144.4	0.6	2.2
Totals	305.7	299.9	4.0	14.6

Table 4-27. Forest Acreage and Annual Removal Rates (1987-1994) in Subwatershed 06010103070.

CROPS	TONS/ACRE/YEAR
Non Agricultural Land Use	0.00
Grass (Hayland)	0.30
Grass (Pastureland)	0.42
Grass, Forbs, Legumes (Mixed Pasture)	0.31
Forest Land (Grazed)	0.00
Forest Land (Not Grazed)	0.00
Farmsteads and Ranch Headquarters	0.33
Corn (Row Crops)	4.98
Tobacco (Row Crops)	10.63
Legume Grass (Hayland)	0.34
Other Cropland not Planted	0.12

Table 4-28. Annual Estimated Soil Loss in Subwatershed 06010103070.

4.2.F. 06010103080

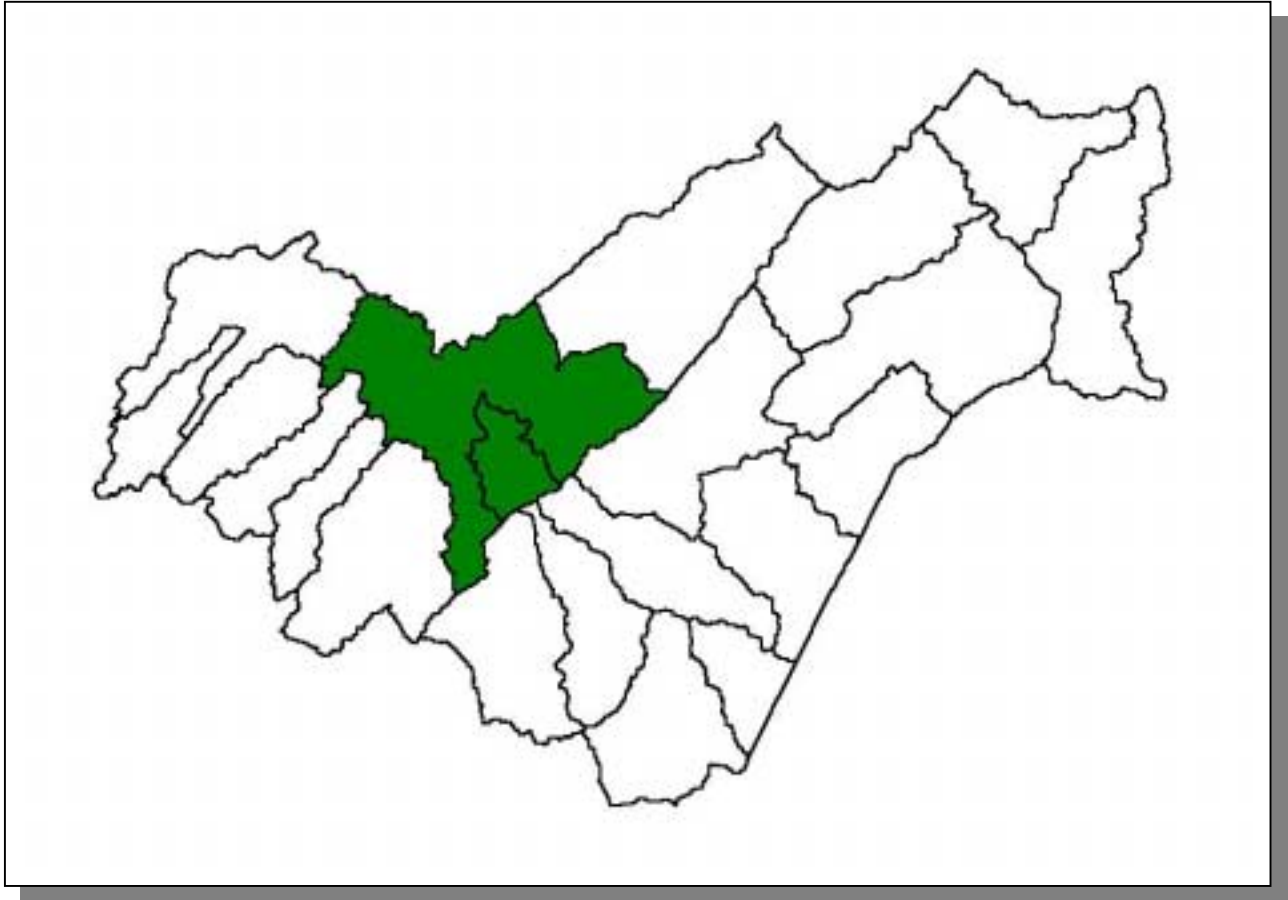


Figure 4-30. Location of Subwatershed 06010103080. All Watauga HUC-14 subwatershed boundaries are shown for reference.

4.2.F.i. General Description.

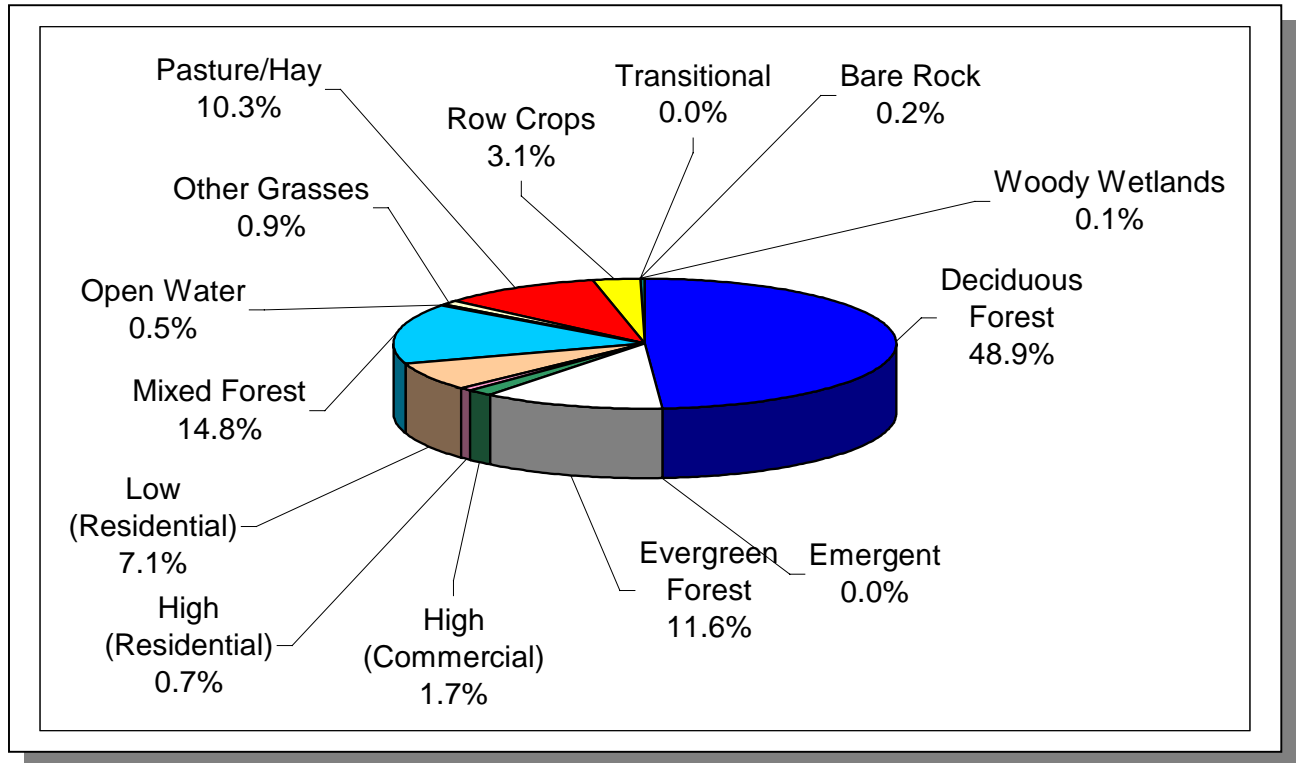


Figure 4-31. Land Use Distribution in Subwatershed 06010103080. More information is provided in Watauga-Appendix IV.

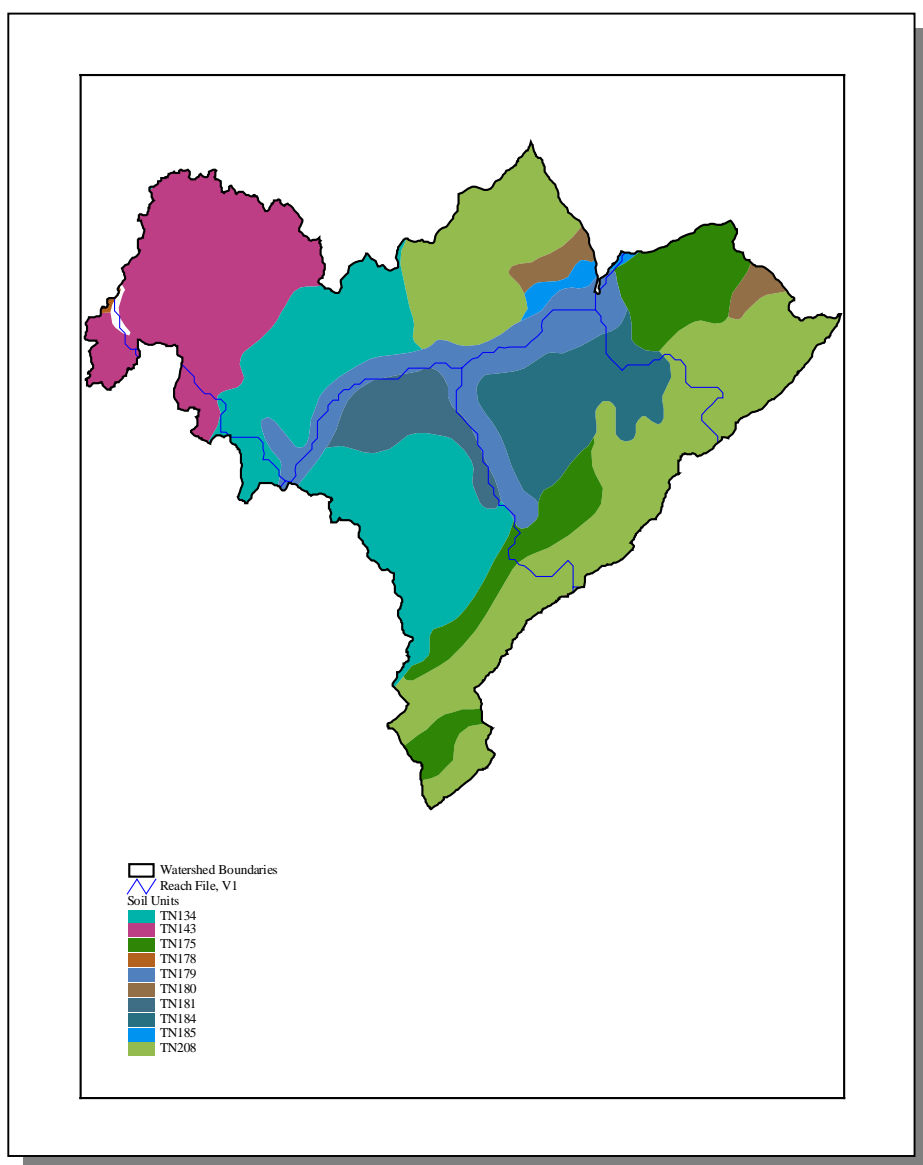


Figure 4-32. STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 06010103080.

STATSGO MAP UNIT ID	PERCENT HYDRIC	HYDROLOGIC GROUP	PERMEABILITY (in/hr)	SOIL pH	ESTIMATED SOIL TEXTURE	SOIL ERODIBILITY
TN134	0.00	B	1.38	5.18	Loam	0.31
TN143	0.00	C	1.22	6.44	Loam	0.32
TN175	0.00	B	1.49	5.23	Loam	0.30
TN178	8.00	C	1.46	5.45	Loam	0.28
TN179	0.00	B	3.90	5.62	Sandy Loam	0.25
TN180	0.00	B	1.71	4.97	Loam	0.28
TN181	14.00	C	3.79	4.99	Loam	0.30
TN184	0.00	C	1.45	4.74	Loam	0.29
TN185	0.00	B	2.81	5.10	Loam	0.28
TN208	0.00	C	4.02	4.84	Loam	0.25

Table 4-29. Soil Characteristics by STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 06010103080. More information is provided in Watauga-Appendix IV.

	TOTAL COUNTY POPULATION			ESTIMATED POPULATION IN WATERSHED		PERCENT CHANGE
County	1990	1997 Est.	Portion of Watershed (%)	1990	1997	
Carter	51,505	53,132	19.62	10,107	10,426	3.2
Sullivan	143,596	150,371	0.54	776	813	4.8
Washington	92,315	101,368	0.91	838	920	9.8
Totals	287,416	304,871		11,721	12,159	3.7

Table 4-30. Population Estimates in Subwatershed 06010103080.

Populated Place	County	Population	NUMBER OF HOUSING UNITS			
			Total	Public Sewer	Septic Tank	Other
Johnson City	Washington	49,178	21,214	19,213	2,001	0
Elizabethton	Carter	11,931	5,191	4,991	200	0
Watauga	Carter	334	153	4	133	16
Totals		61,443	26,558	24,208	2,334	16

Table 4-31. Housing and Sewage Disposal Practices of Select Communities in Subwatershed 06010103080.



Figure 4-33. Location of Historical Streamflow Data Collection Sites In Subwatershed 06010103080. Subwatershed 06010103040060 and 06010103050010 boundaries are shown for reference. More information is provided in Watauga-Appendix IV.



Figure 4-34. Location of STORET Monitoring Sites in Subwatershed 06010103080. Subwatershed 06010103040060 and 06010103050010 boundaries are shown for reference. More information is provided in Watauga-Appendix IV.

4.2.F.ii. Point Source Contributions.

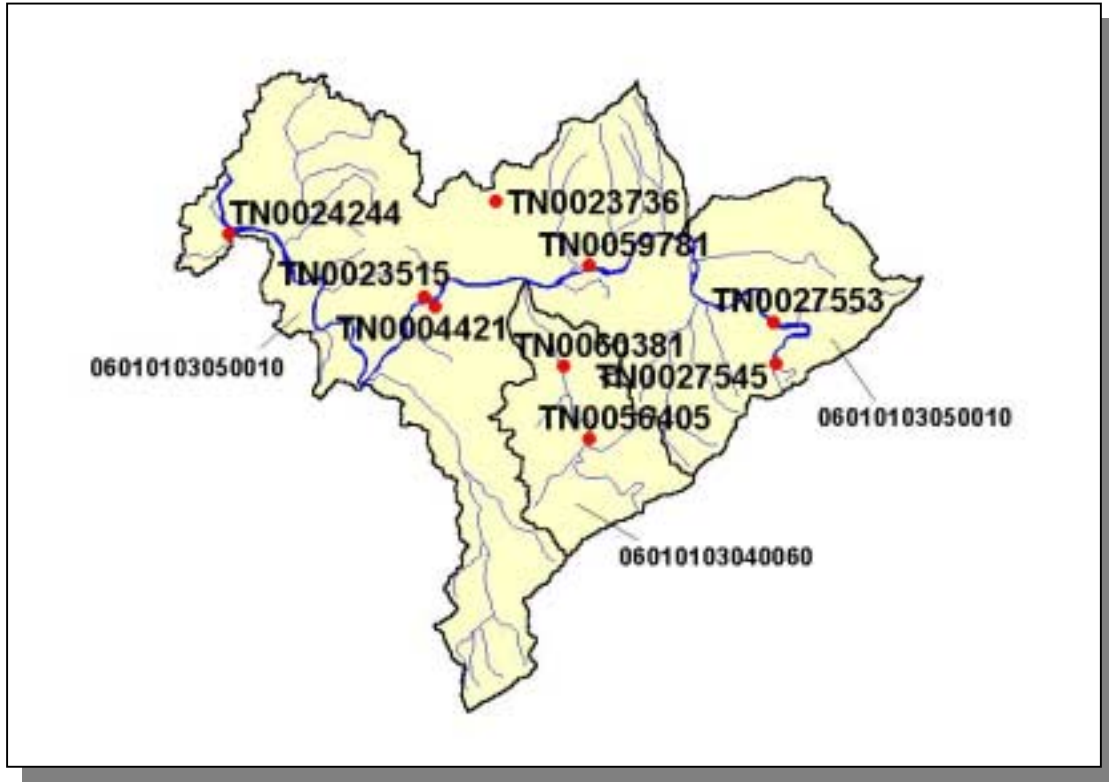


Figure 4-35. Location of Active Point Source Facilities (Individual Permits) in Subwatershed 06010103080. Subwatershed 06010103040060 and 06010103050010 boundaries are shown for reference. More information, including the names of facilities, is provided in Watauga-Appendix IV.



Figure 4-36. Location of Active Mining Sites in Subwatershed 06010103080. Subwatershed 06010103040060 and 06010103050010 boundaries are shown for reference. More information, including the names of facilities, is provided in Watauga-Appendix IV.



Figure 4-37. Location of ARAP Sites (Individual Permits) in Subwatershed 06010103080. Subwatershed 06010103040060 and 06010103050010 boundaries are shown for reference. More information is provided in Watauga-Appendix IV.

4.2.F.iii. Nonpoint Source Contributions.

LIVESTOCK (COUNTS)					
Beef Cow	Milk Cow	Cattle	Chickens	Hogs	Sheep
1,676	307	4,422	5	8	28

Table 4-32. Summary of Livestock Count Estimates in Subwatershed 06010103080. According to the Census of Agriculture, "Cattle" includes heifers, heifer calves, steers, bulls and bull calves.

County	INVENTORY		REMOVAL RATE	
	Forest Land (thousand acres)	Timber Land (thousand acres)	Growing Stock (million cubic feet)	Sawtimber (million board feet)
Carter	161.3	155.5	3.4	12.4
Sullivan	123.7	123.7	0.1	0.3
Washington	54.8	50.3	0.3	0.2
Total	339.8	329.5	3.8	12.9

Table 4-33. Forest Acreage and Average Annual Removal Rates (1987-1994) in Subwatershed 06010103080.

CROPS	TONS/ACRE/YEAR
Non Agricultural Land Use	0.00
Corn (Row Crops)	5.45
Tobacco (Row Crops)	11.66
Grass (Hayland)	0.30
Legume Grass (Hayland)	0.38
Grass (Pastureland)	0.42
Grass, Forbs, Legumes (Mixed Pasture)	0.37
Forest Land (Grazed)	0.00
Forest Land (Not Grazed)	0.00
Farmsteads and Ranch Headquarters	0.34
Other Land in Farms	0.02

Table 4-34. Annual Estimated Total Soil Loss in Subwatershed 06010103080.

4.2.G. 06010103090.

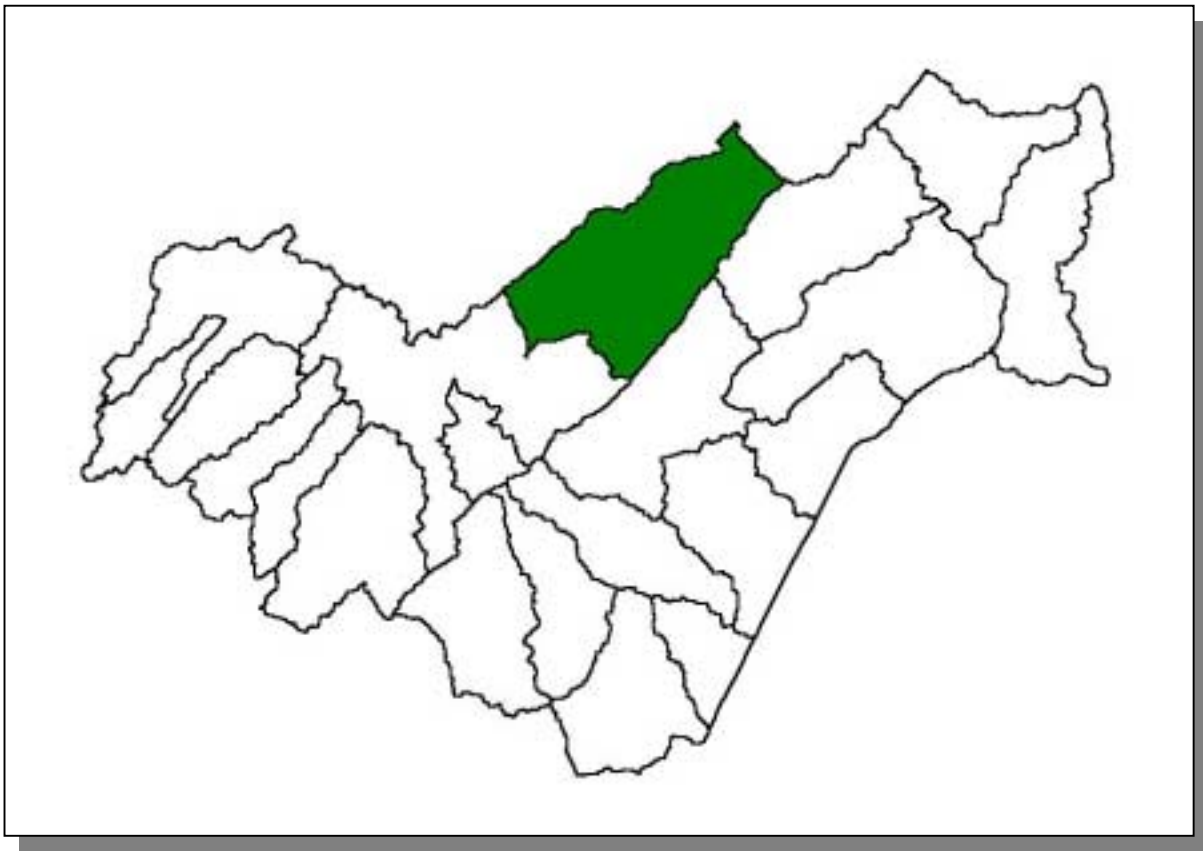


Figure 4-38. Location of Subwatershed 06010103090. All Watauga HUC-14 subwatershed boundaries are shown for reference.

4.2.G.i. General Description.

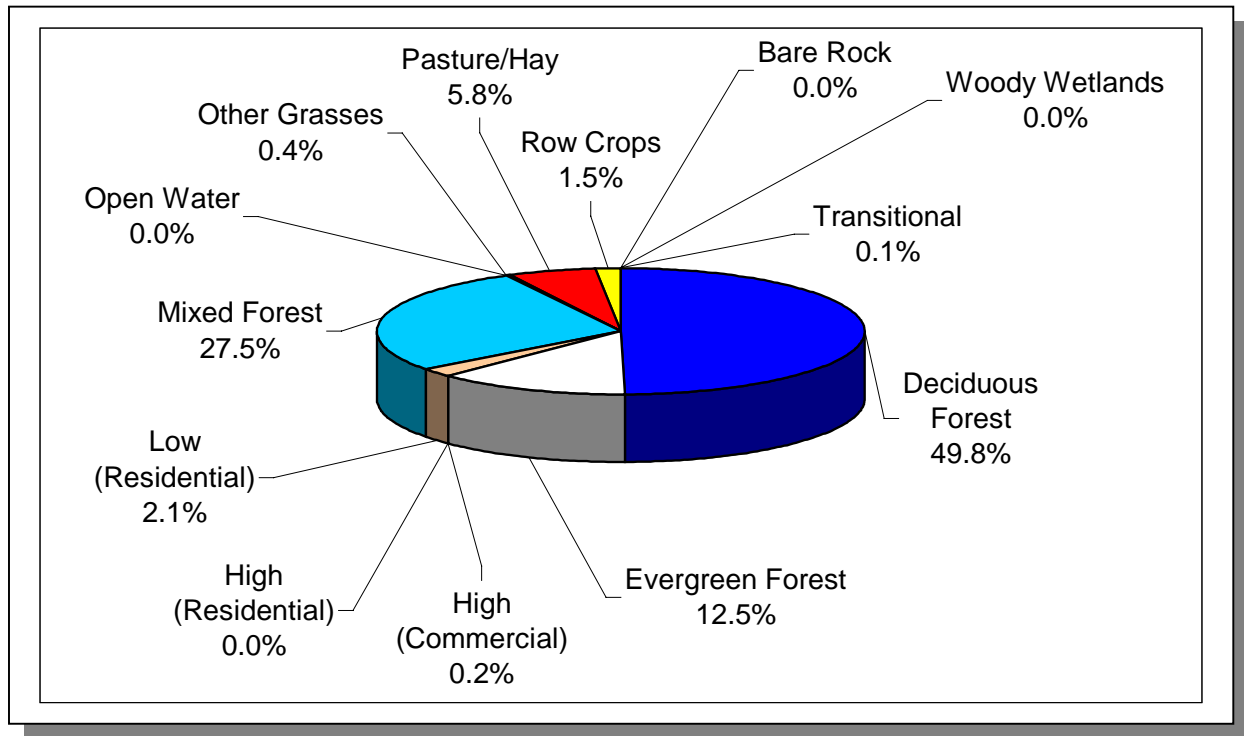


Figure 4-39. Land Use Distribution in Subwatershed 06010103090. More information is provided in Watauga-Appendix IV.

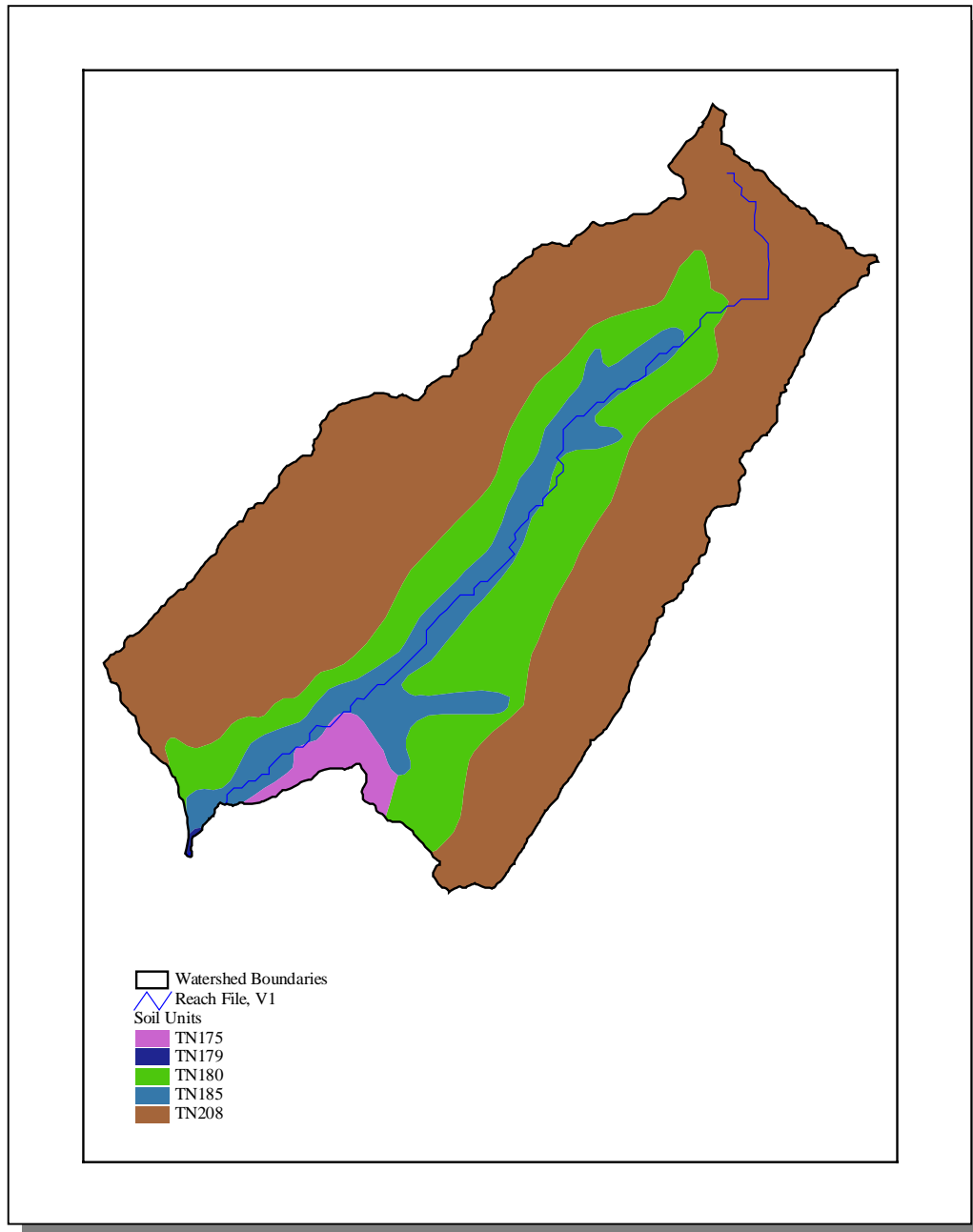


Figure 4-40. STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 06010103090.

STATSGO MAP UNIT ID	PERCENT HYDRIC	HYDROLOGIC GROUP	PERMEABILITY (in/hr)	SOIL pH	ESTIMATED SOIL TEXTURE	SOIL ERODIBILITY
TN175	0.00	B	1.49	5.23	Loam	0.30
TN179	0.00	B	3.90	5.62	Sandy Loam	0.25
TN180	0.00	B	1.71	4.97	Loam	0.28
TN185	0.00	B	2.81	5.10	Loam	0.28
TN208	0.00	C	4.02	4.84	Loam	0.25

Table 4-35. Soil Characteristics by STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 06010103090. More information is provided in Watauga-Appendix IV.

	COUNTY POPULATION			ESTIMATED POPULATION IN WATERSHED		% CHANGE
County	1990	1997 Est.	Portion of Watershed (%)	1990	1997	
Carter	51,505	53,132	16.04	8,259	8,520	3.2
Johnson	13,766	16,572	0.02	2	3	50.0
Sullivan	14,3596	150,371	0.26	371	389	4.9
Totals	208,867	220,075		8,632	8,912	3.2

Table 4-36. Population Estimates in Subwatershed 06010103090.

4.2.G.ii. Point Source Contributions.

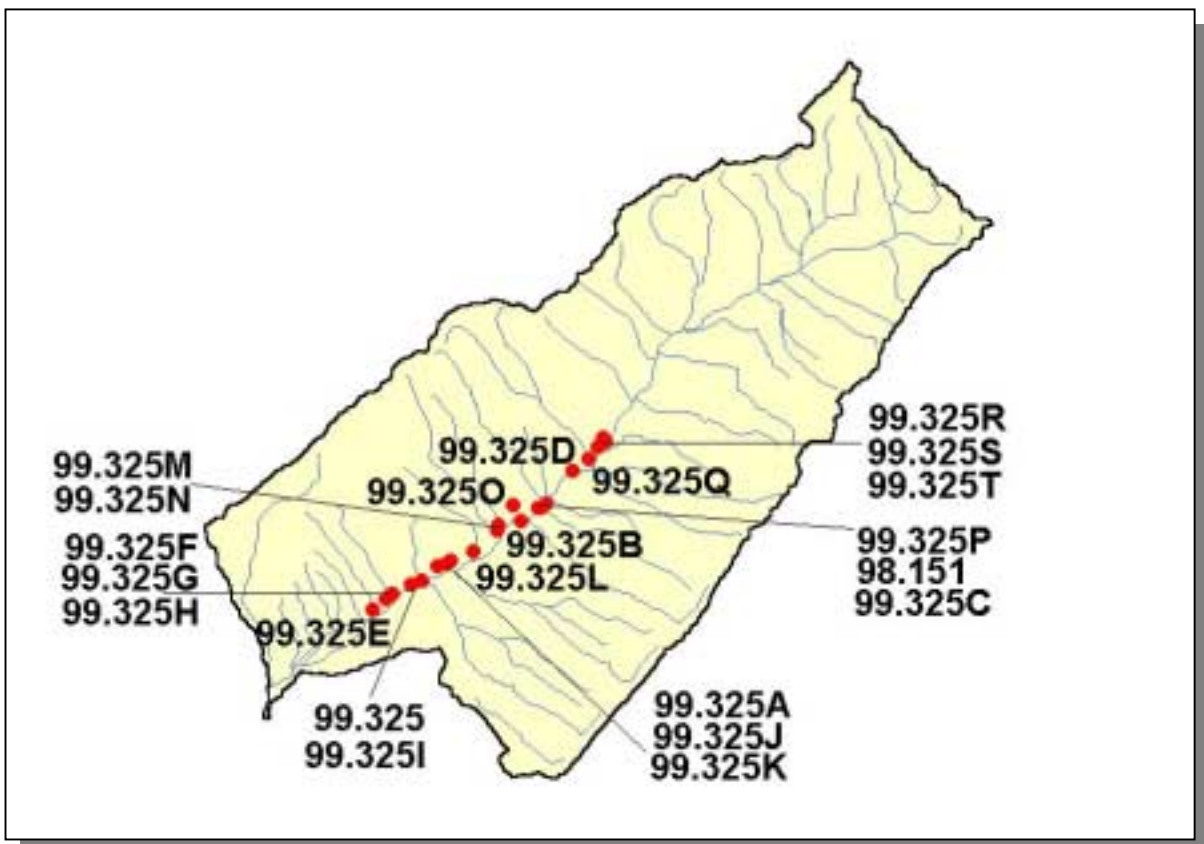


Figure 4-41. Location of ARAP Sites (Individual Permits) in Subwatershed 06010103090. More information is provided in Watauga-Appendix IV.

4.2.G.iii. Nonpoint Source Contributions.

LIVESTOCK (COUNTS)					
Beef Cow	Milk Cow	Cattle	Chickens	Hogs	Sheep
713	130	1,909	<5	<5	12

Table 4-37. Summary of Livestock Count Estimates in Subwatershed 06010103090.
According to the Census of Agriculture, "Cattle" includes heifers, heifer calves, steers, bulls and bull calves.

County	INVENTORY		REMOVAL RATE	
	Forest Land (thousand acres)	Timber Land (thousand acres)	Growing Stock (million cubic feet)	Sawtimber (million board feet)
Carter	161.3	155.5	3.4	12.4
Johnson	144.4	144.4	0.6	2.2
Sullivan	123.7	123.7	0.1	0.3
Totals	429.4	423.6	4.1	14.9

Table 4-38. Forest Acreage and Average Removal Rates (1987-1994) in Subwatershed 06010103090.

CROPS	TONS/ACRE/YEAR
Non Agricultural Land Use	0.00
Corn (Row Crops)	5.08
Tobacco (Row Crops)	11.97
Grass (Hayland)	0.28
Legume Grass (Hayland)	0.40
Grass (Pastureland)	0.40
Grass, Forbs, Legumes (Mixed Pasture)	0.35
Forest Land (Grazed)	0.00
Forest Land (Not Grazed)	0.00
Farmsteads and Ranch Headquarters	0.35
Other Land in Farms	0.02
Other Cropland not Planted	0.12

Table 4-39. Annual Estimated Total Soil Loss in Subwatershed 06010103090.

4.2.H. 06010103100.

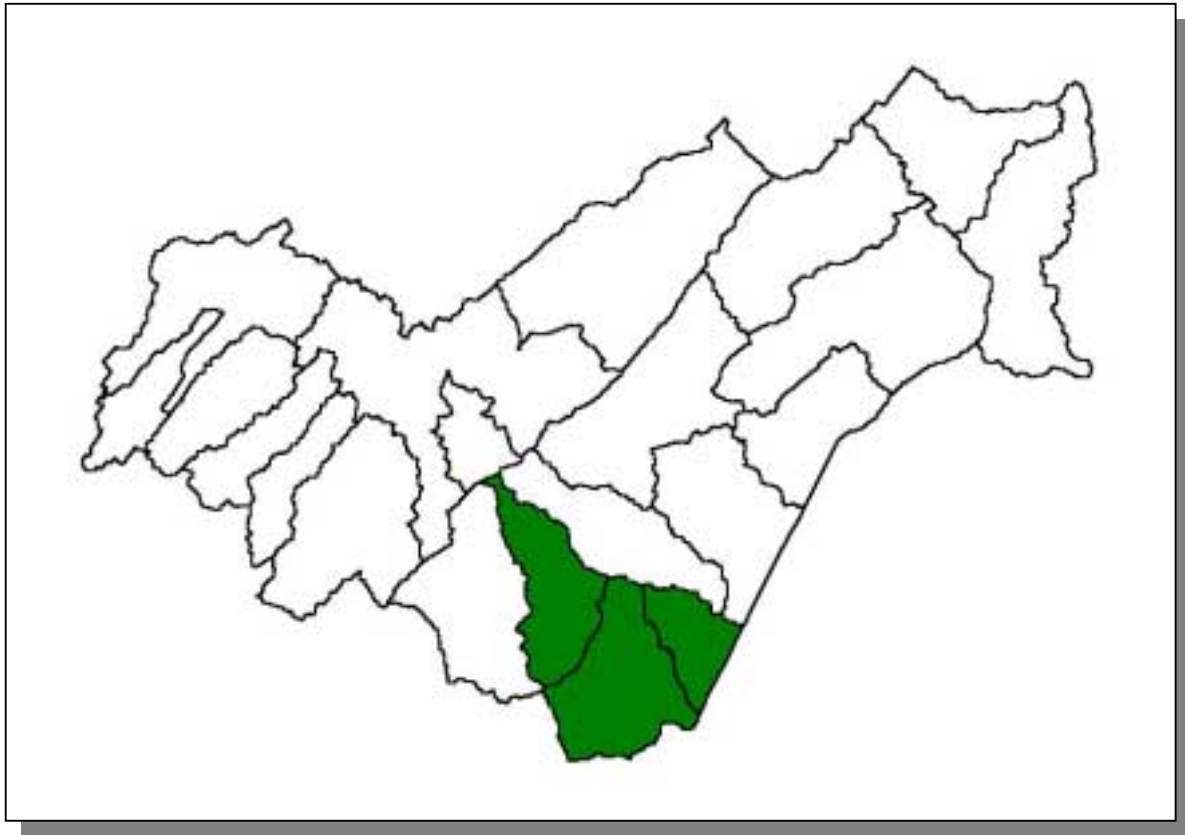


Figure 4-42. Location of Subwatershed 06010103100. All Watauga HUC-14 subwatershed boundaries are shown for reference.

4.2.H.i. General Description.

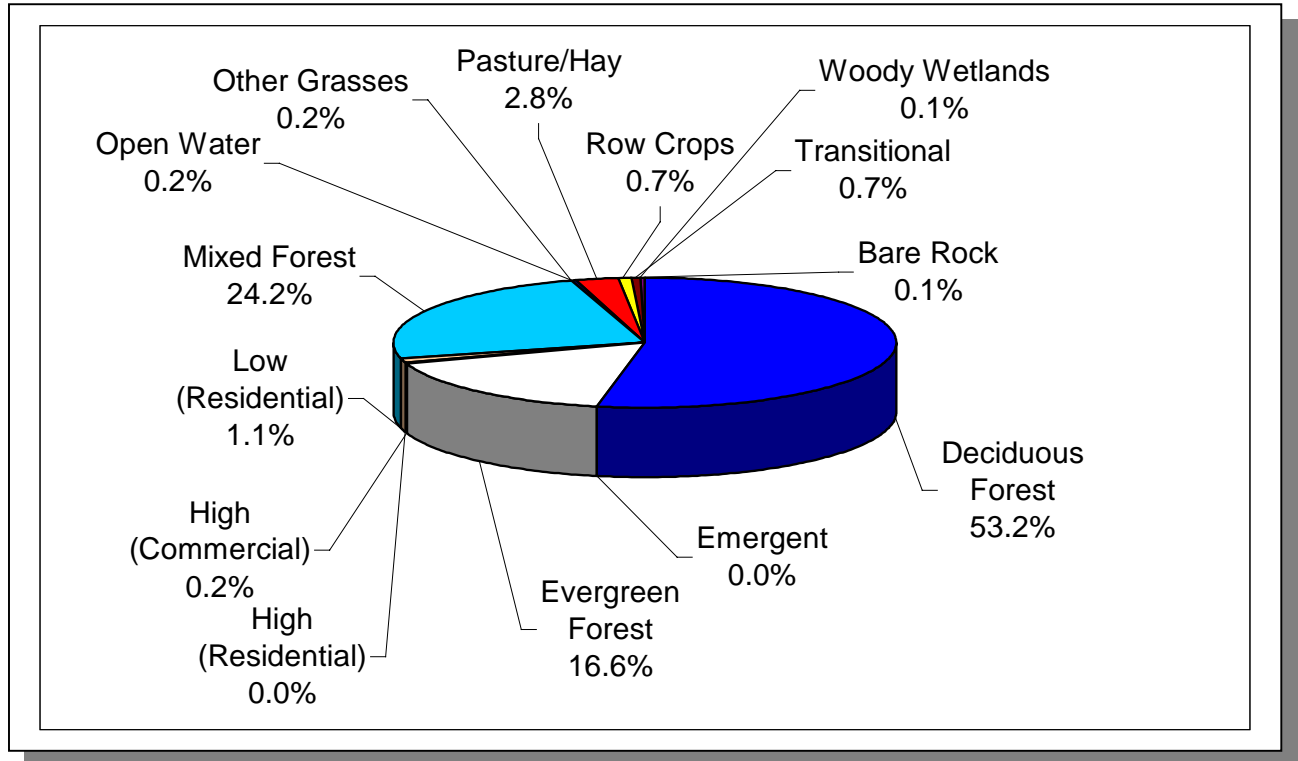


Figure 4-43. Land Use Distribution in Subwatershed 06010103100. More information is provided in Watauga-Appendix IV.

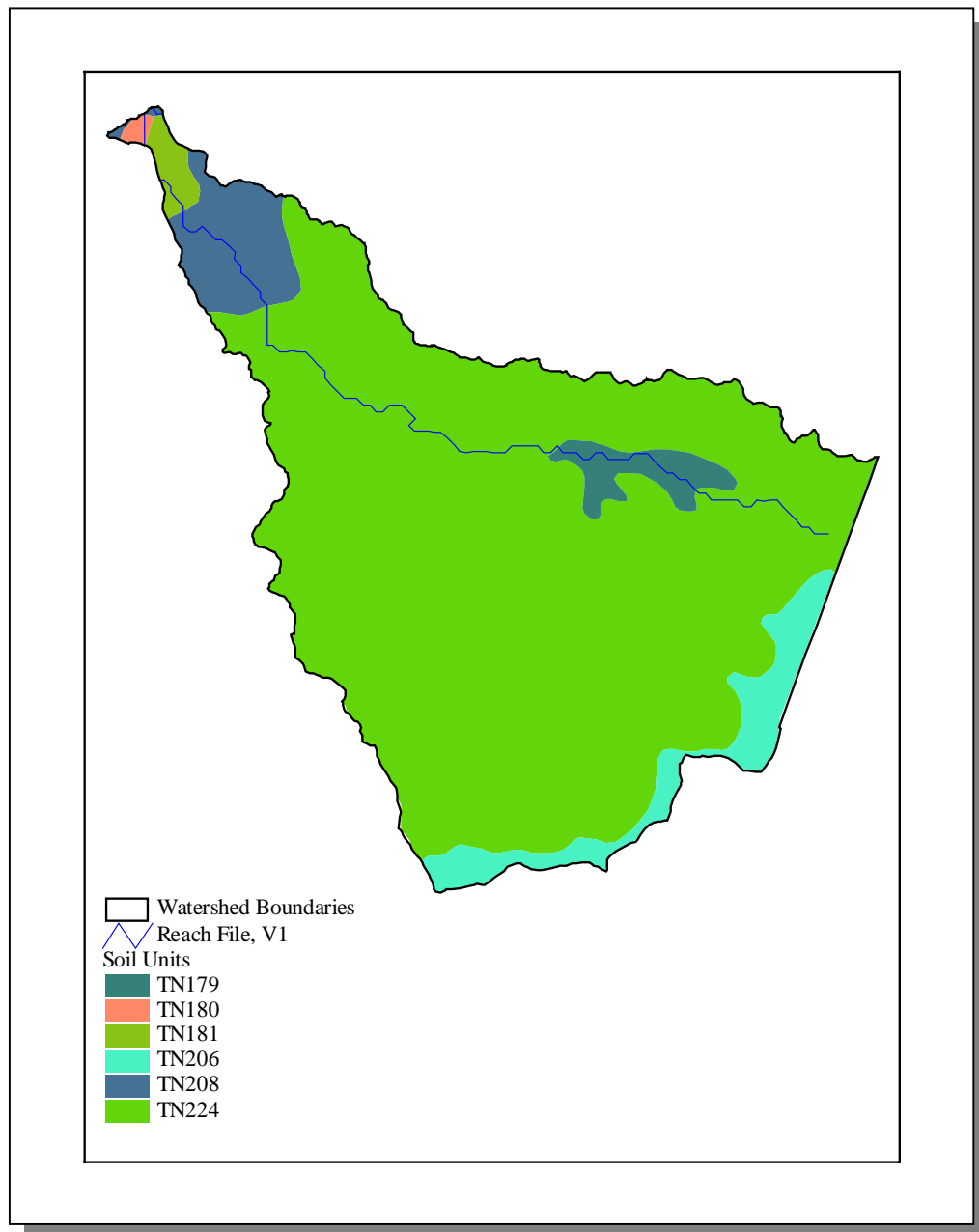


Figure 4-44. STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 06010103100.

STATSGO MAP UNIT ID	PERCENT HYDRIC	HYDROLOGIC GROUP	PERMEABILITY (in/hour)	SOIL pH	ESTIMATED SOIL TEXTURE	SOIL ERODIBILITY
TN179	0.00	B	3.90	5.62	Sandy Loam	0.25
TN180	0.00	B	1.71	4.97	Loam	0.28
TN181	14.00	C	3.79	4.99	Loam	0.30
TN206	0.00	B	3.99	4.76	Sandy Loam	0.20
TN208	0.00	C	4.02	4.84	Loam	0.25
TN224	1.00	B	3.97	5.27	Loam	0.24

Table 4-40. Soil Characteristics by STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 06010103100. More information is provided in Watauga-Appendix IV.

	COUNTY POPULATION			ESTIMATED POPULATION IN WATERSHED		% CHANGE
County	1990	1997 Est.	Portion of Watershed (%)	1990	1997	
Carter	51,505	53,132	18.37	9,464	9,763	3.2

Table 4-41. Population Estimates in Subwatershed 06010103100.



Figure 4-45. Location of STORET Monitoring Sites in Subwatershed 06010103100. Subwatershed 06010103040010, 06010103040020 and 06010103040030 boundaries are shown for reference. More information is provided in Watauga-Appendix IV.

4.2.H.ii. Point Source Contributions.

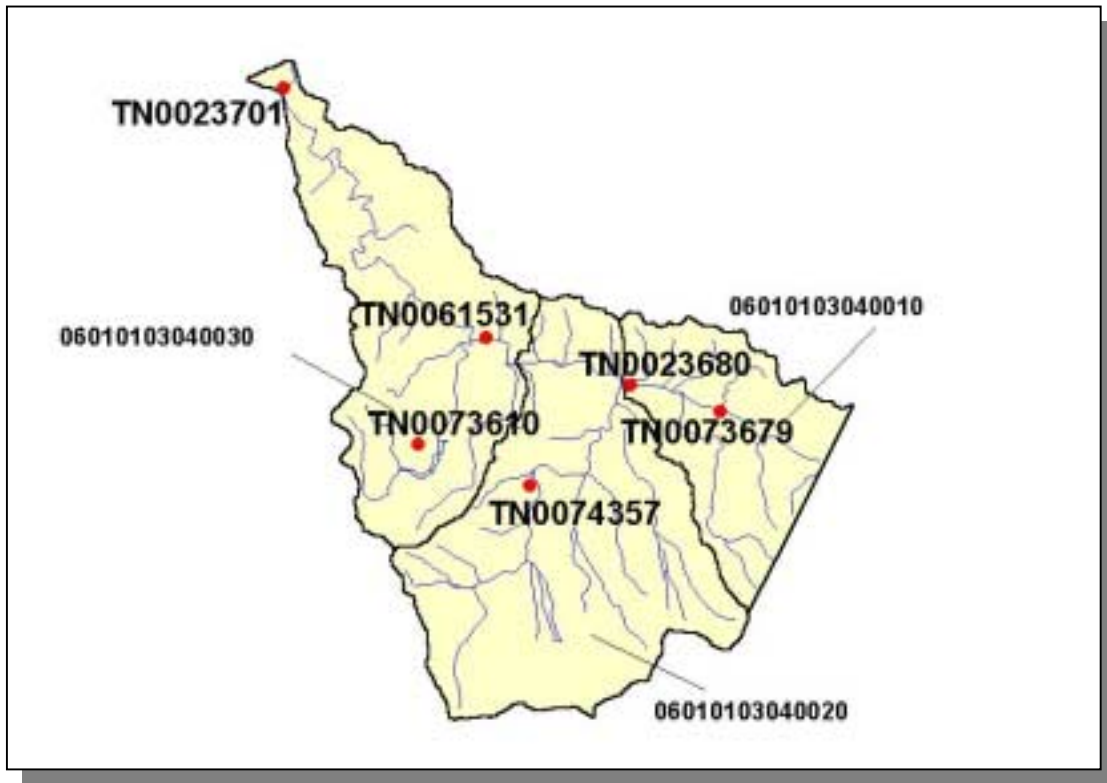


Figure 4-46. Location of Active Point Source Facilities (Individual Permits) in Subwatershed 06010103100. Subwatershed 06010103040010, 06010103040020 and 06010103040030 boundaries are shown for reference. More information, including the names of facilities, is provided in Watauga-Appendix IV.

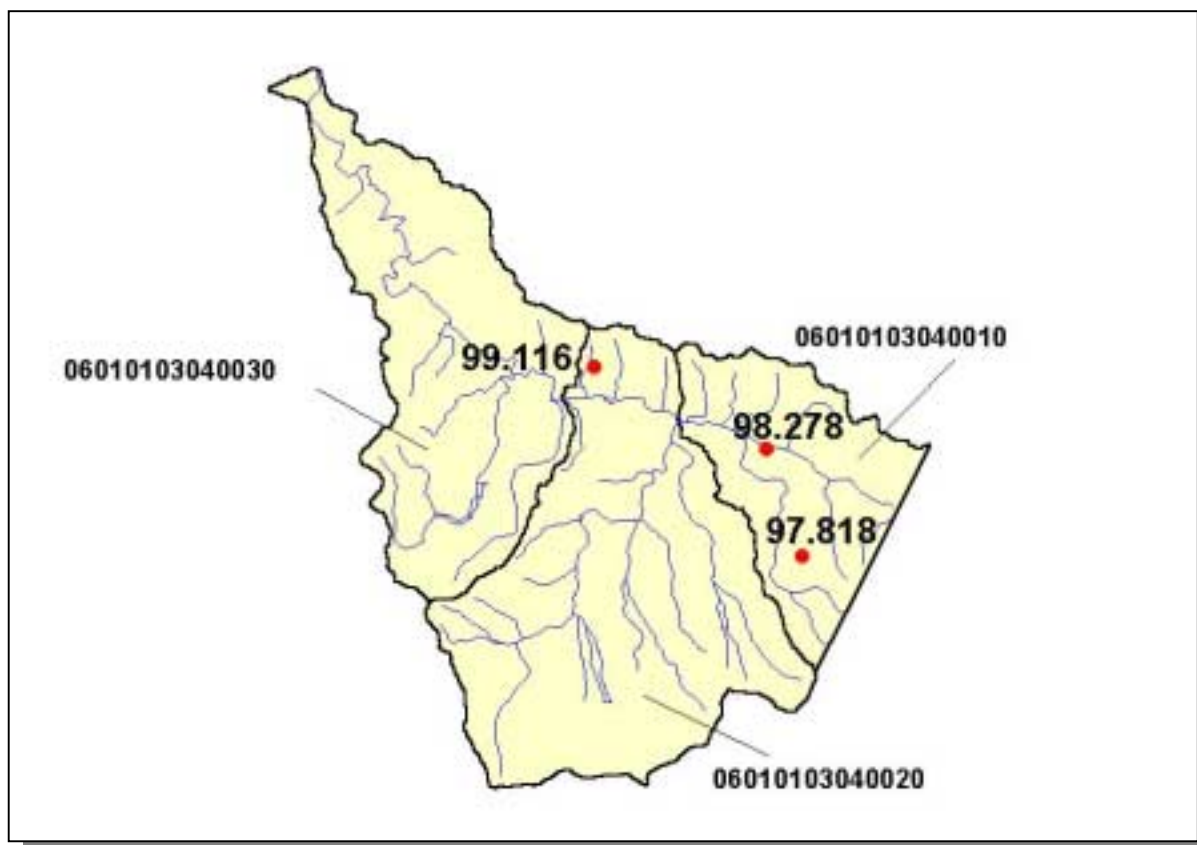


Figure 4-47. Location of ARAP Sites (Individual Permits) in Subwatershed 06010103100. Subwatershed 06010103040010, 06010103040020 and 06010103040040 boundaries are shown for reference. Additional information may be found in Watauga-Appendix IV.

4.2.H.iii. Nonpoint Source Contributions.

LIVESTOCK (COUNTS)					
Beef Cow	Cattle	Milk Cow	Chickens	Hogs	Sheep
387	1,035	71	<5	<5	7

Table 4-42. Summary of Livestock Count Estimates in Subwatershed 06010103100. According to the Census of Agriculture, "Cattle" includes heifers, heifer calves, steers, bulls and bull calves.

County	INVENTORY		REMOVAL RATE	
	Forest Land (thousand acres)	Timber Land (thousand acres)	Growing Stock (million cubic feet)	Sawtimber (million board feet)
Carter	161.3	155.5	3.4	12.4

Table 4-43. Forest Acreage and Average Annual Removal Rates (1987-1994) in Subwatershed 06010103100.

CROPS	TONS/ACRE/YEAR
Tobacco (Row Crops)	12.14
Grass (Pastureland)	0.39
Grass, Forbs, Legumes (Mixed Pasture)	0.33
Forest Land (Not Grazed)	0.00
Farmsteads and Ranch Headquarters	0.35
Non Agricultural Land Use	0.00
Corn (Row Crops)	5.02
Grass (Hayland)	0.28
Legume Grass (Hayland)	0.40

Table 4-44. Annual Estimated Total Soil Loss in Subwatershed 06010103100.

4.2.1. 06010103110.

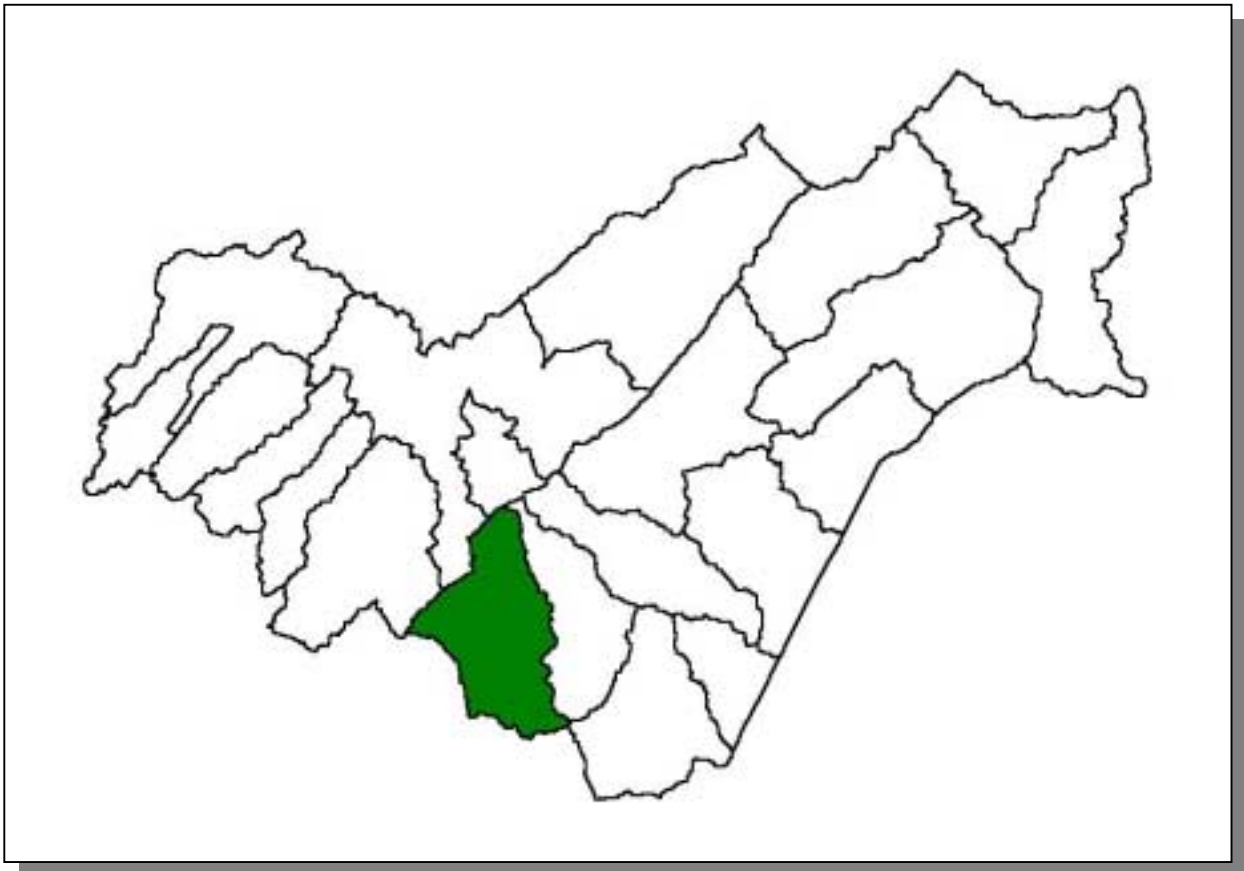


Figure 4-48. Location of Subwatershed 06010103110. All Watauga HUC-14 subwatershed boundaries are shown for reference.

4.2.1.i. General Description.

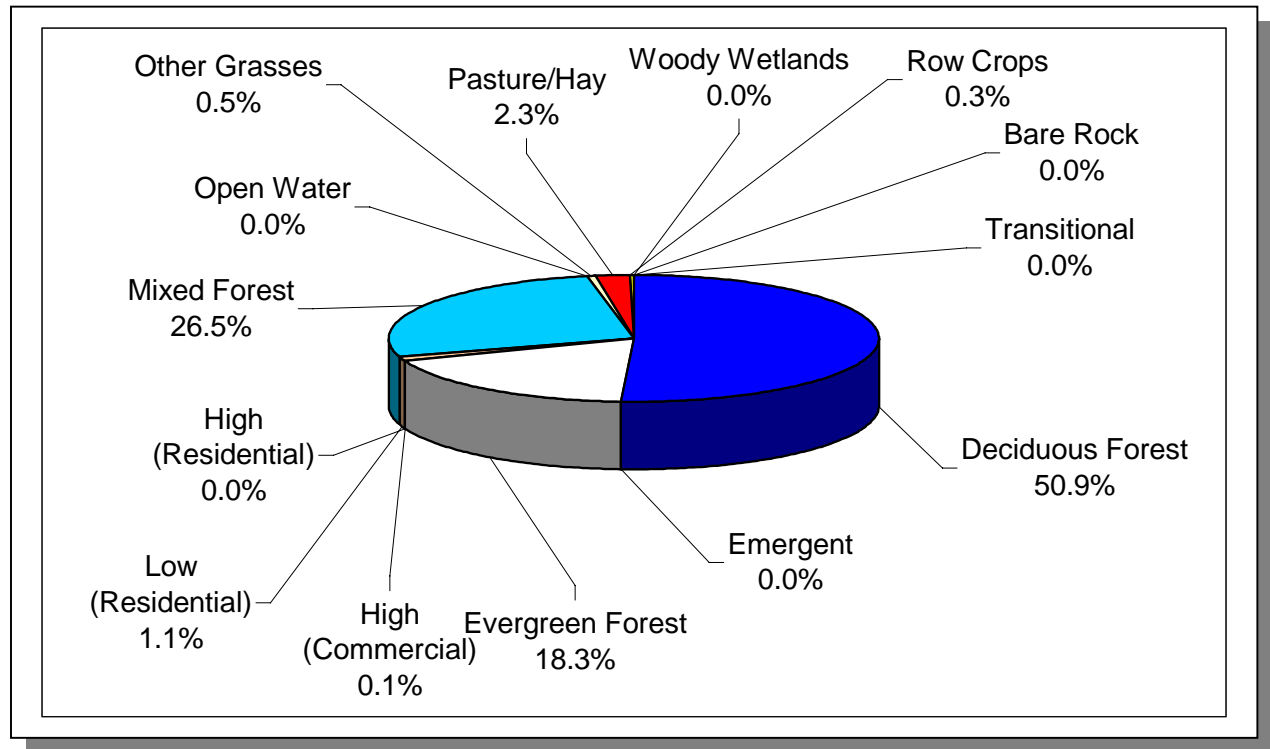


Figure 4-49. Land Use Distribution in Subwatershed 06010103110. More information is provided in Watauga-Appendix IV.

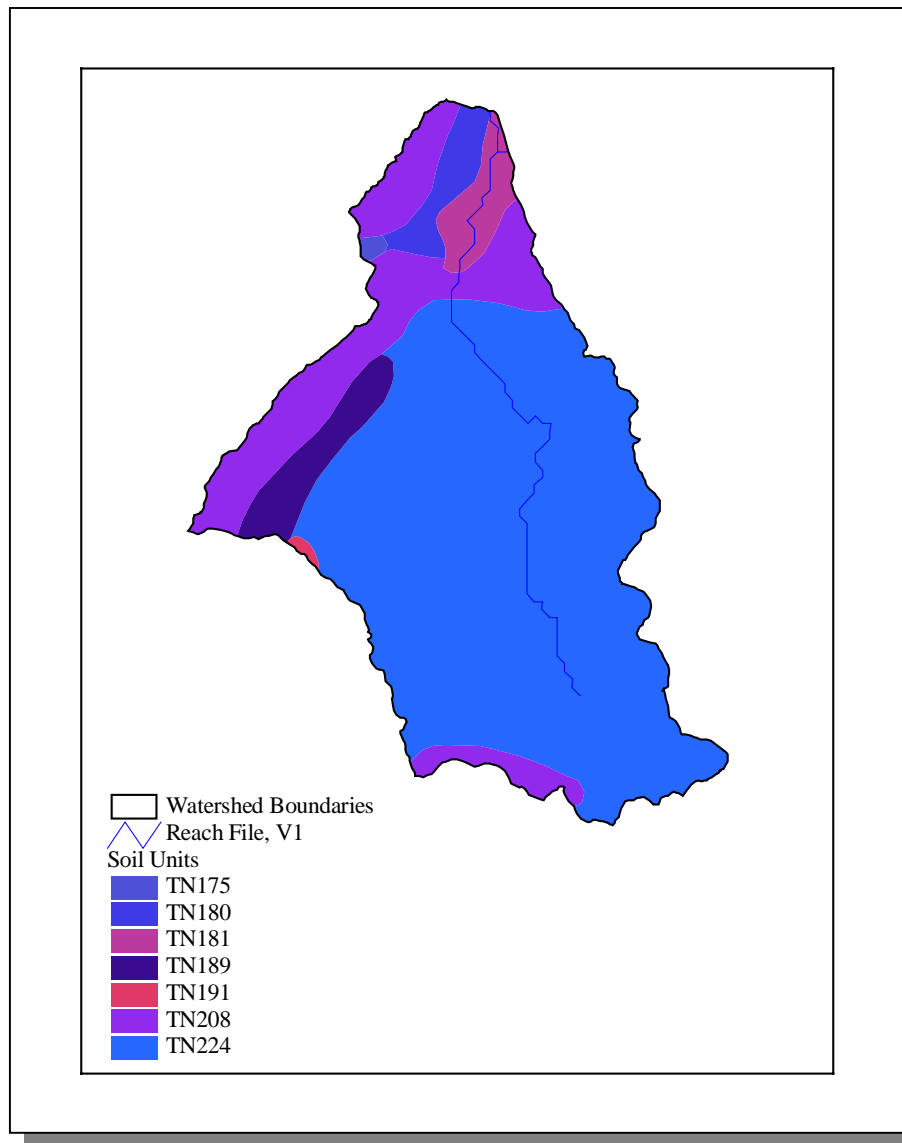


Figure 4-50. STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 06010103110.

STATSGO MAP UNIT ID	PERCENT HYDRIC	HYDROLOGIC GROUP	PERMEABILITY (in/hour)	SOIL pH	ESTIMATED SOIL TEXTURE	SOIL ERODIBILITY
TN175	0.00	B	1.49	5.23	Loam	0.30
TN180	0.00	B	1.71	4.97	Loam	0.28
TN181	14.00	C	3.79	4.99	Loam	0.30
TN189	0.00	B	3.99	5.05	Loam	0.24
TN191	0.00	B	3.03	5.36	Loam	0.27
TN208	0.00	C	4.02	4.84	Loam	0.25
TN224	1.00	B	3.97	5.27	Loam	0.24

Table 4-45. Soil Characteristics by STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 06010103110. More information is provided in Watauga-Appendix IV.

	COUNTY POPULATION			ESTIMATED POPULATION IN WATERSHED		% CHANGE
County	1990	1997 Est.	Portion of Watershed (%)	1990	1997	
Carter	51,505	53,132	8.72	4,493	4,635	3.2
Unicoi	16,549	17,221	0.65	108	112	3.7
Totals	68,054	70,353		4,601	4,747	3.2

Table 4-46. Population Estimates in Subwatershed 06010103110.

4.2.I.ii. Point Source Contributions.

No Contributions.

4.2.I.iii. Nonpoint Source Contributions.

LIVESTOCK (COUNTS)					
Beef Cow	Cattle	Milk Cow	Chickens	Hogs	Sheep
155	407	26	<5	<5	<5

Table 4-47. Summary of Livestock Count Estimates in Subwatershed 06010103110. According to the Census of Agriculture, "Cattle" includes heifers, heifer calves, steers, bulls and bull calves.

	INVENTORY		REMOVAL RATE	
County	Forest Land (thousand acres)	Timber Land (thousand acres)	Growing Stock (million cubic feet)	Sawtimber (million board feet)
Carter	161.3	155.5	3.4	12.4
Unicoi	99.3	89.4	3.1	8.5
Total	260.6	244.9	6.5	20.9

Table 4-48. Forest Acreage and Average Annual Removal Rates (1987-1994) in Subwatershed 06010103110.

CROPS	TONS/ACRE/YEAR
Tobacco (Row Crops)	12.14
Grass (Pastureland)	0.38
Grass, Forbs, Legumes (Mixed Pasture)	0.33
Forest Land (Not Grazed)	0.00
Farmsteads and Ranch Headquarters	0.34
Non Agricultural Land Use	0.00
Corn (Row Crops)	5.02
Grass (Hayland)	0.28
Legume Grass (Hayland)	0.40
Other Vegetable and Truck Crop	6.10
Legume (Hayland)	0.06
Forest Land (Grazed)	0.00

Table 4-49. Annual Estimated Total Soil Loss in Subwatershed 06010103110.

4.2.J. 06010103120.

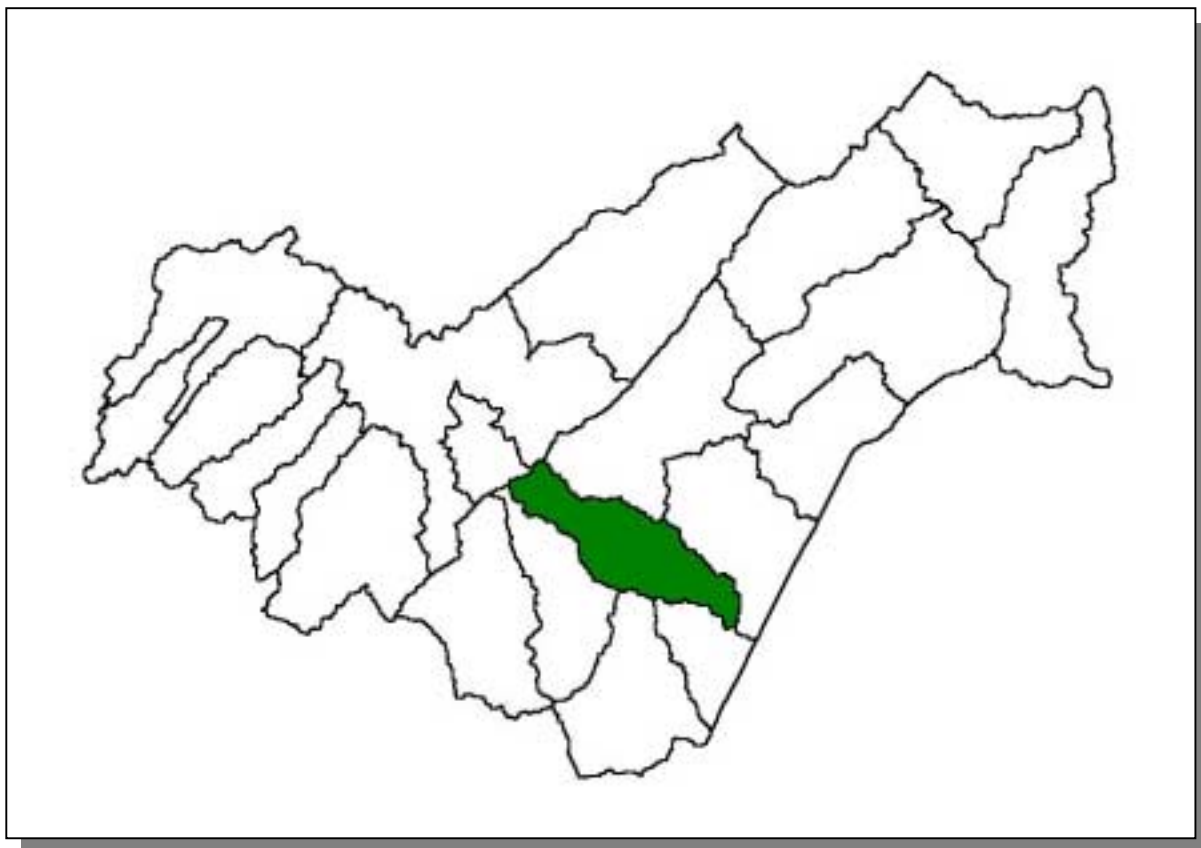


Figure 4-51. Location of Subwatershed 06010103120. All Watauga HUC-14 subwatershed boundaries are shown for reference.

4.2.J.i. General Description.

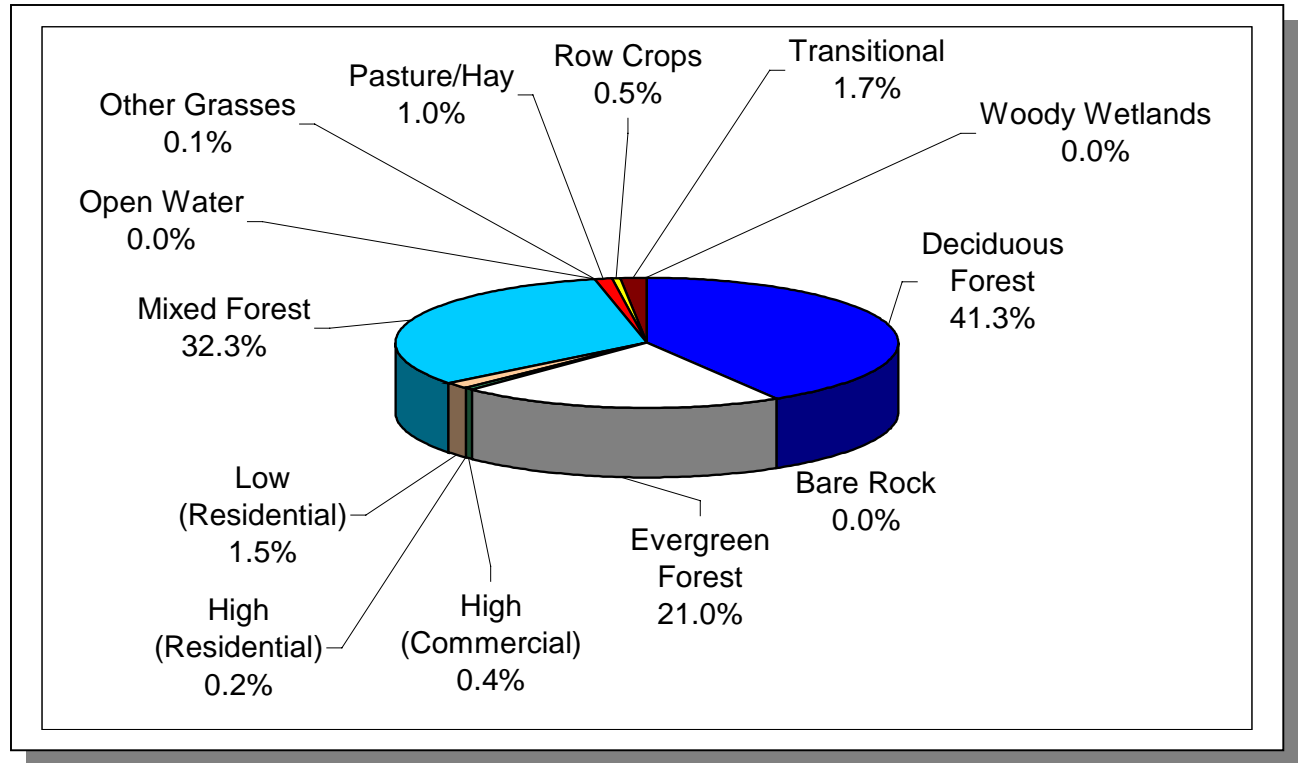


Figure 4-52. Land Use Distribution in Subwatershed 06010103120. More information is provided in Watauga-Appendix IV.

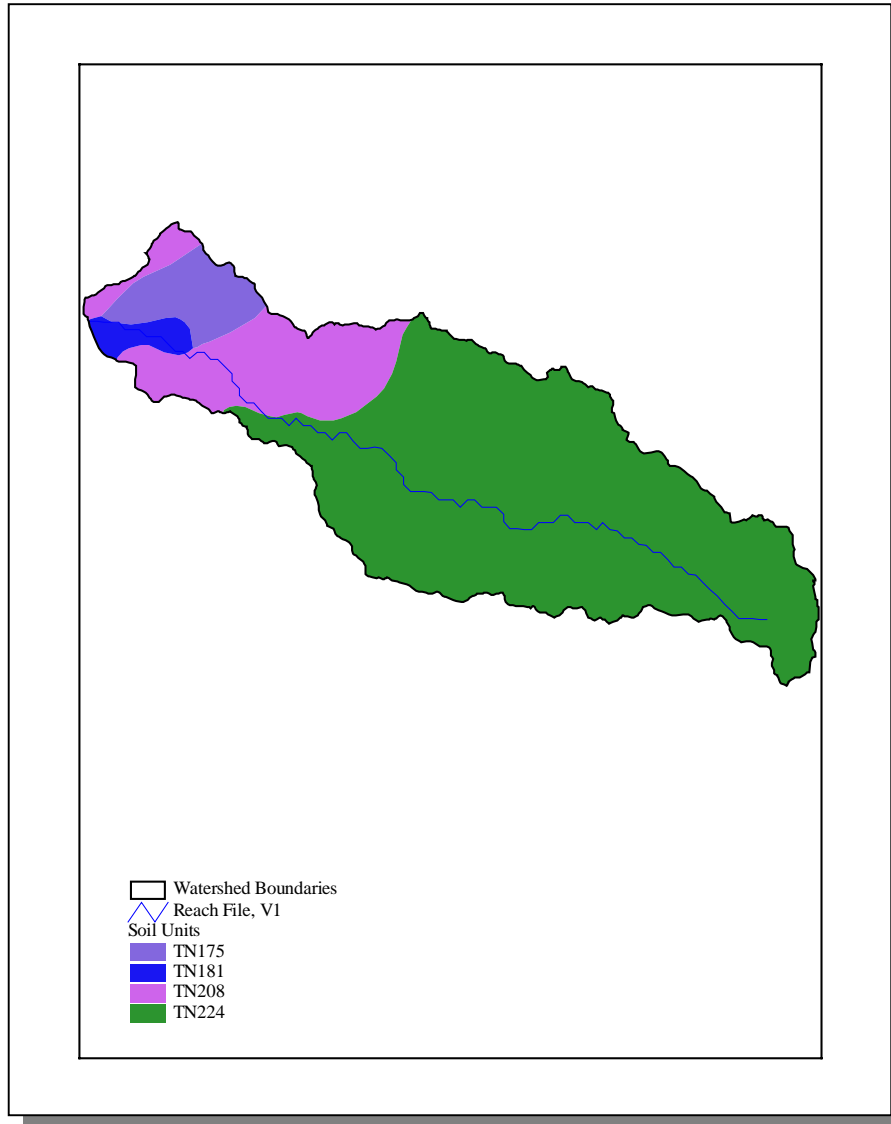


Figure 4-53. STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 06010103120.

STATSGO MAP UNIT ID	PERCENT HYDRIC	HYDROLOGIC GROUP	PERMEABILITY (in/hour)	SOIL pH	ESTIMATED SOIL TEXTURE	SOIL ERODIBILITY
TN175	0.00	B	1.49	5.23	Loam	0.30
TN181	14.00	C	3.79	4.99	Loam	0.30
TN208	0.00	C	4.02	4.84	Loam	0.25
TN224	1.00	B	3.97	5.27	Loam	0.24

Table 4-50. Soil Characteristics by STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 06010103120. More details are provided in Watauga-Appendix IV.

	COUNTY POPULATION			ESTIMATED POPULATION IN WATERSHED		% CHANGE
County	1990	1997 Est.	Portion of Watershed (%)	1990	1997	
Carter	51,505	53,132	7.3	3,759	3,878	3.2

Table 4-51. Population Estimates in Subwatershed 06010103120.



Figure 4-54. Location of STORET Monitoring Sites in Subwatershed 06010103120. More information is provided in Watauga-Appendix IV.

4.2.J.ii Point Source Contributions.

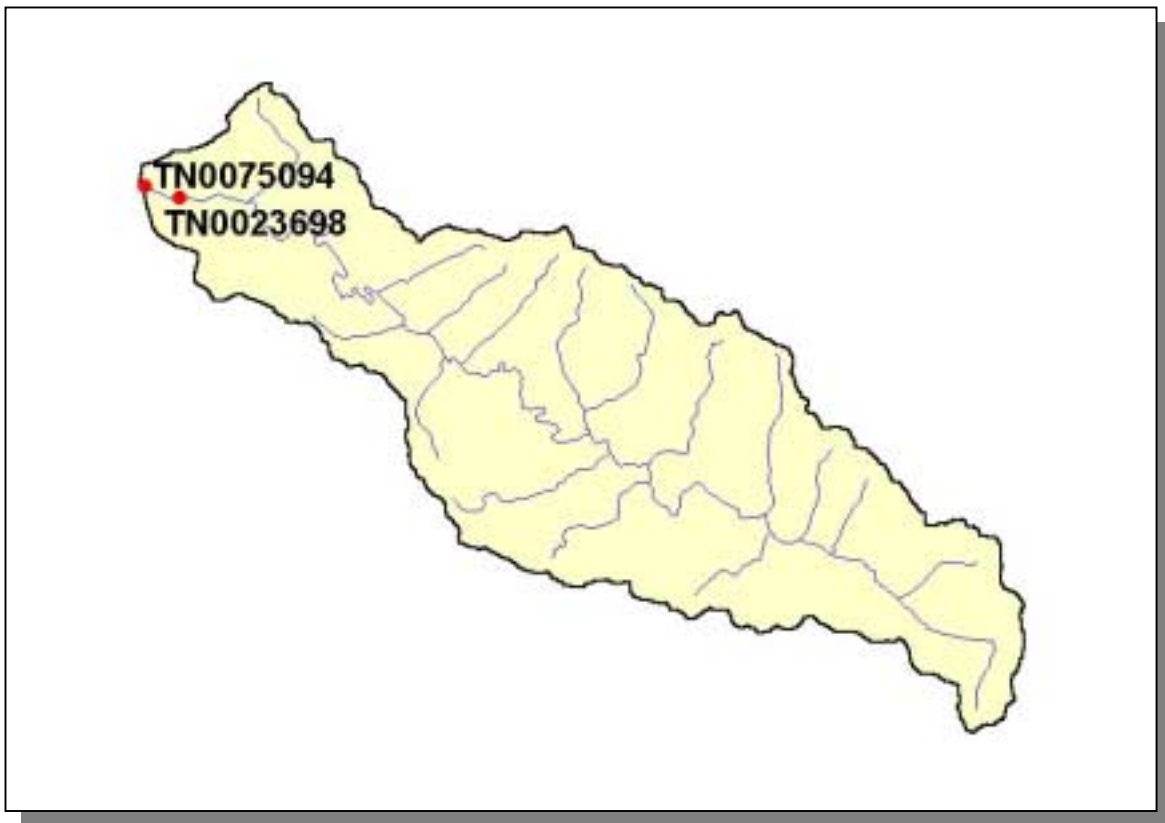


Figure 4-55. Location of Active Point Source Facilities (Individual Permits) in Subwatershed 06010103120. More information, including the names of facilities, is provided in Watauga-Appendix IV.

4.2.J.iii. Nonpoint Source Contributions.

LIVESTOCK (COUNTS)			
Beef Cow	Cattle	Milk Cow	Sheep
53	141	10	1

Table 4-52. Summary of Livestock Count Estimates in Subwatershed 06010103120. According to the Census of Agriculture, "Cattle" includes heifers, heifer calves, steers, bulls and bull calves.

County	INVENTORY		REMOVAL RATE	
	Forest Land (thousand acres)	Timber Land (thousand acres)	Growing Stock (million cubic feet)	Sawtimber (million board feet)
Carter	161.3	155.5	3.4	12.4

Table 4-53. Forest Acreage and Annual Removal Rates (1987-1994) in Subwatershed 06010103120.

CROPS	TONS/ACRE/YEAR
Tobacco (Row Crops)	12.14
Grass (Pastureland)	0.39
Grass, Forbs, Legumes (Mixed Pasture)	0.33
Forest Land (Not Grazed)	0.00
Farmsteads and Ranch Headquarters	0.35
Non Agricultural Land Use	0.00
Corn (Row Crops)	5.02
Grass (Hayland)	0.28
Legume Grass (Hayland)	0.40

Table 4-54. Annual Estimated Total Soil Loss in Subwatershed 06010103120.

4.2.K. 06010103130.

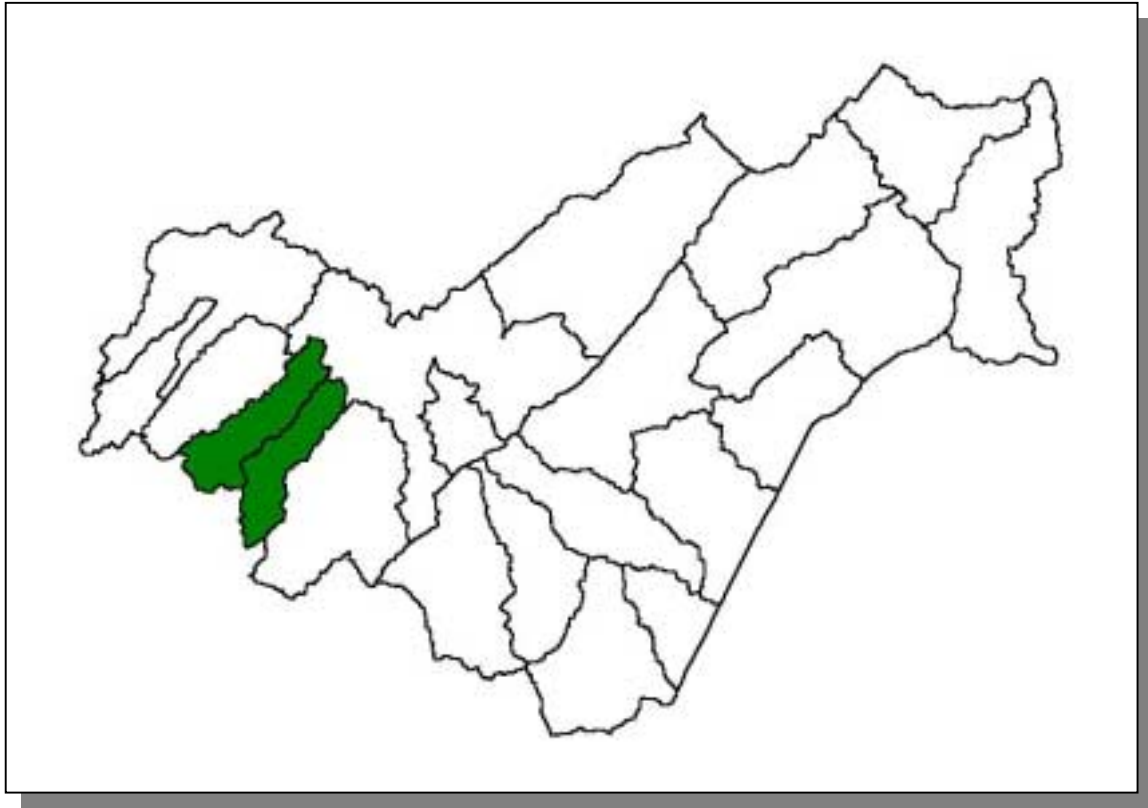


Figure 4-56. Location of Subwatershed 06010103130. All Watauga HUC-14 subwatershed boundaries are shown for reference.

4.2.B.i. General Description.

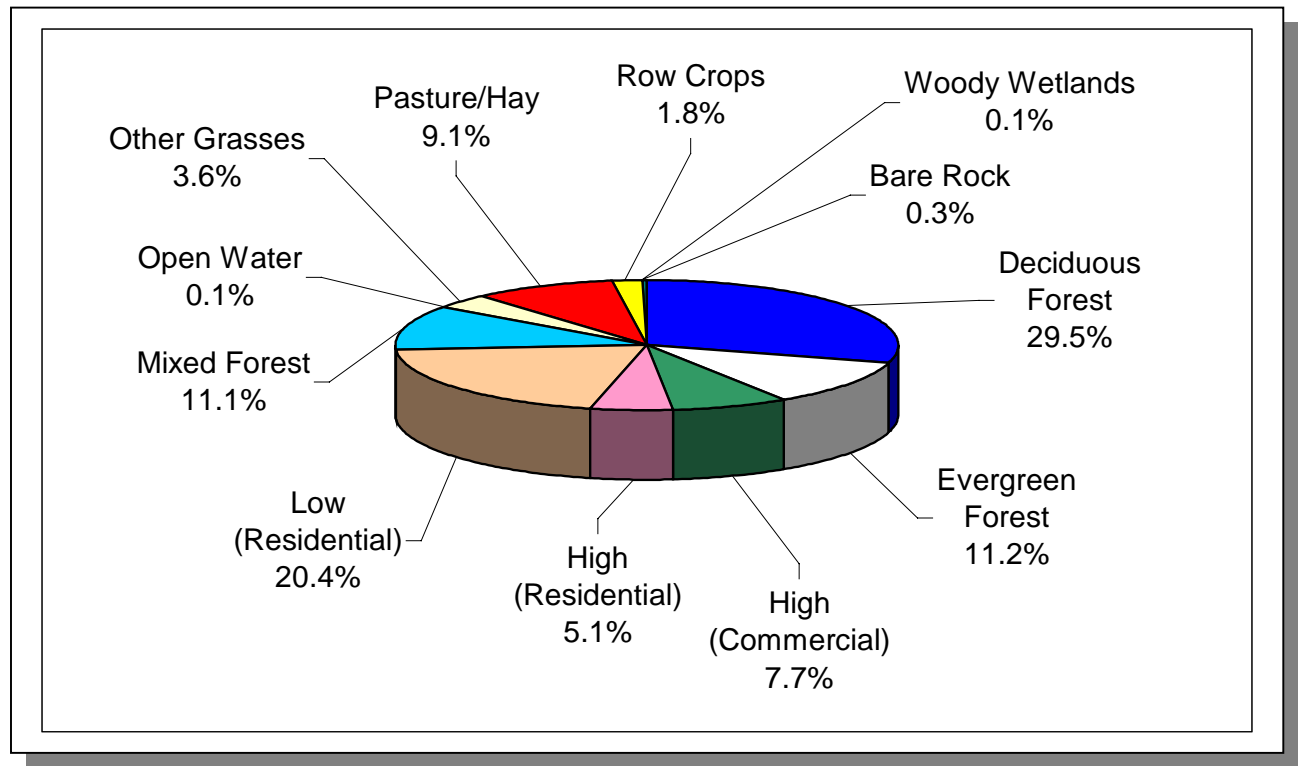


Figure 4-57. Land Use Distribution in Subwatershed 06010103130. More information is provided in Watauga-Appendix IV.

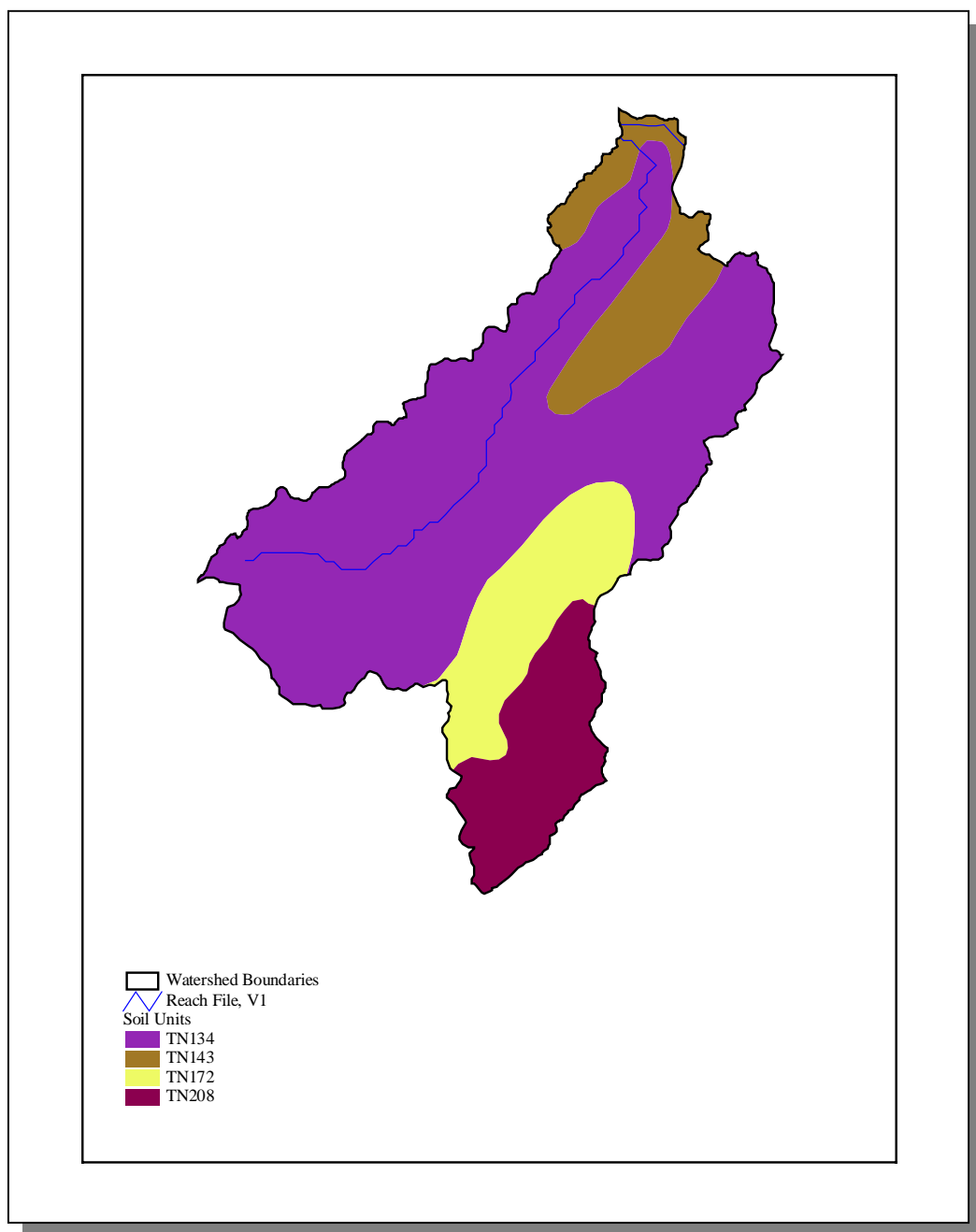


Figure 4-58. STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 06010103130.

STATSGO MAP UNIT ID	PERCENT HYDRIC	HYDROLOGIC GROUP	PERMEABILITY (in/hour)	SOIL pH	ESTIMATED SOIL TEXTURE	SOIL ERODIBILITY
TN134	0.00	B	1.38	5.18	Loam	0.31
TN143	0.00	C	1.22	6.44	Loam	0.32
TN172	0.00	B	3.87	5.13	Loam	0.26
TN208	0.00	C	4.02	4.84	Loam	0.25

Table 4-55. Soil Characteristics by STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 06010103130. More information is provided in Watauga-Appendix IV.

	COUNTY POPULATION			ESTIMATED POPULATION IN WATERSHED		% CHANGE
County	1990	1997 Est.	Portion of Watershed (%)	1990	1997	
Carter	51,505	53,132	1.39	715	738	3.2
Unicoi	16,549	17,221	0.06	11	11	0.0
Washington	92,315	101,368	7.7	7,106	7,803	9.8
Totals	160,369	171,721		7,832	8,552	9.2

Table 4-56. Population Estimates in Subwatershed 06010103130.

			NUMBER OF HOUSING UNITS			
Populated Place	County	Population	Total	Public Sewer	Septic Tank	Other
Johnson City	Washington	49,178	21,214	19,213	2,001	0
Elizabethton	Carter	11,931	5,191	4,991	200	0
Totals		61,109	26,405	24,,204	2,201	0

Table 4-57. Housing and Sewage Disposal Practices of Select Communities in Subwatershed 06010103130.

4.2.K.ii. Point Source Contributions.



Figure 4-59. Location of Active Point Source Facilities (Individual Permits) in Subwatershed 06010103130. Subwatershed 06010103050040, and 06010103050050 boundaries are shown for reference. More information, including the names of facilities, is provided in Watauga-Appendix IV.

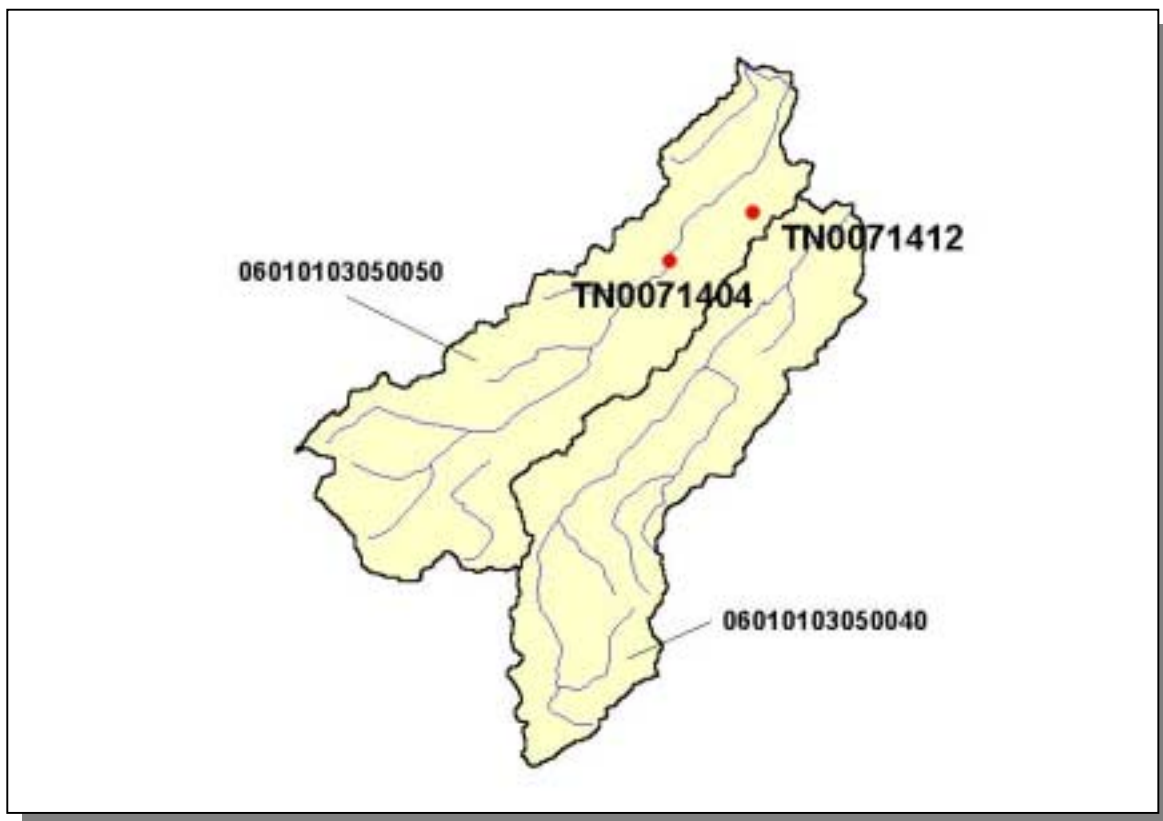


Figure 4-60. Location of Active Mining Sites in Subwatershed 06010103130. Subwatershed 06010103050040 and 06010103050050 boundaries are shown for reference. More information, including the names of facilities, is provided in Watauga-Appendix IV.

4.2.K.ii.a. Dischargers to Water Bodies Listed on the 1998 303(d) List

There is one NPDES facility discharging to water bodies listed on the 1998 303(d) list in Subwatershed 06010103130:

- TN0002500 discharges to Sinking Creek @ RM 3.6



Figure 4-61. Location of NPDES Dischargers to Water Bodies Listed on the 1998 303(d) List in Subwatershed 06010103130. Subwatershed 06010103050040, and 06010103050050 boundaries are shown for reference. The names of facilities are provided in Watauga-Appendix IV.

PERMIT #	7Q10	1Q20	30Q2	QLTA
TN0002500	0	0	0	0.0828

Table 4-58. Receiving Stream Flow Information for NPDES Dischargers to Waterbodies Listed on the 1998 303(d) List in Subwatershed 06010103130. Data are in million gallons per day (MGD). 30Q2 data were calculated using the correlation method (TN0001384) or using data in Flow Duration and Low Flows of Tennessee Streams Through 1992 (TN0057789).

PERMIT #	CBOD ₅
TN0002500	X

Table 4-59. Monitoring Requirements for NPDES Dischargers to Waterbodies Listed on the 1998 303(d) List in Subwatershed 06010103130.

4.2.K.iii. Nonpoint Source Contributions.

LIVESTOCK (COUNTS)					
Beef Cow	Cattle	Milk Cow	Chickens	Hogs	Sheep
774	1,846	167	<5	8	12

Table 4-60. Summary of Livestock Count Estimates in Subwatershed 06010103130.
According to the Census of Agriculture, "Cattle" includes heifers, heifer calves, steers, bulls and bull calves.

County	INVENTORY		REMOVAL RATE	
	Forest Land (thousand acres)	Timber Land (thousand acres)	Growing Stock (million cubic feet)	Sawtimber (million board feet)
Carter	161.3	155.5	3.4	12.4
Unicoi	99.3	89.4	3.1	8.5
Washington	54.8	50.3	0.3	0.2
Total	315.4	295.2	6.8	21.1

Table 4-61. Forest Acreage and Average Annual Removal Rates (1987-1994) in Subwatershed 06010103130.

CROPS	TONS/ACRE/YEAR
Tobacco (Row Crops)	7.59
Grass (Pastureland)	0.52
Grass, Forbs, Legumes (Mixed Pasture)	0.40
Forest Land (Not Grazed)	0.00
Farmsteads and Ranch Headquarters	0.24
Non Agricultural Land Use	0.00
Corn (Row Crops)	12.15
Grass (Hayland)	0.56
Legume Grass (Hayland)	0.23
Forest Land (Grazed)	0.00
Other Vegetable and Truck Crop	6.10
Legume (Hayland)	0.06

Table 4-62. Annual Estimated Total Soil Loss in Subwatershed 06010103130.

4.2.L. 06010103140.

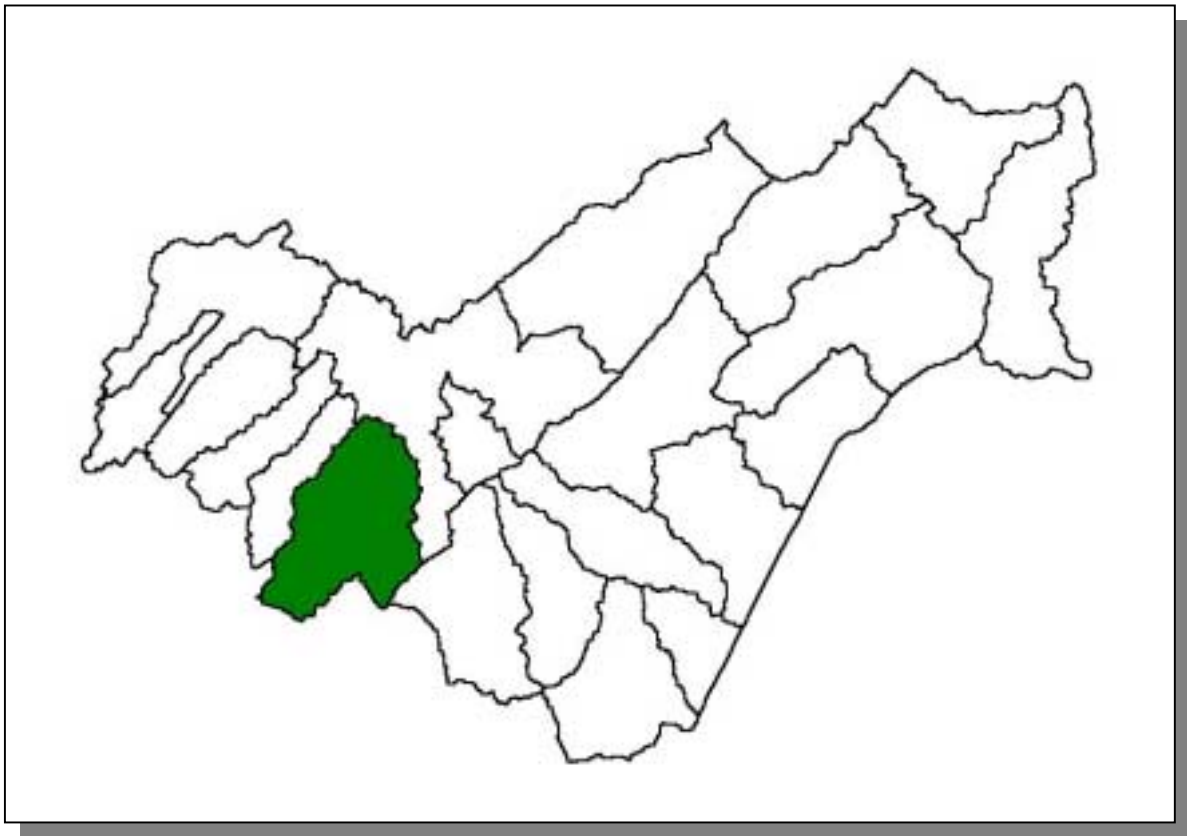


Figure 4-62. Location of Subwatershed 06010103140. All Watauga HUC-14 subwatershed boundaries are shown for reference.

4.2.L.i. General Description.

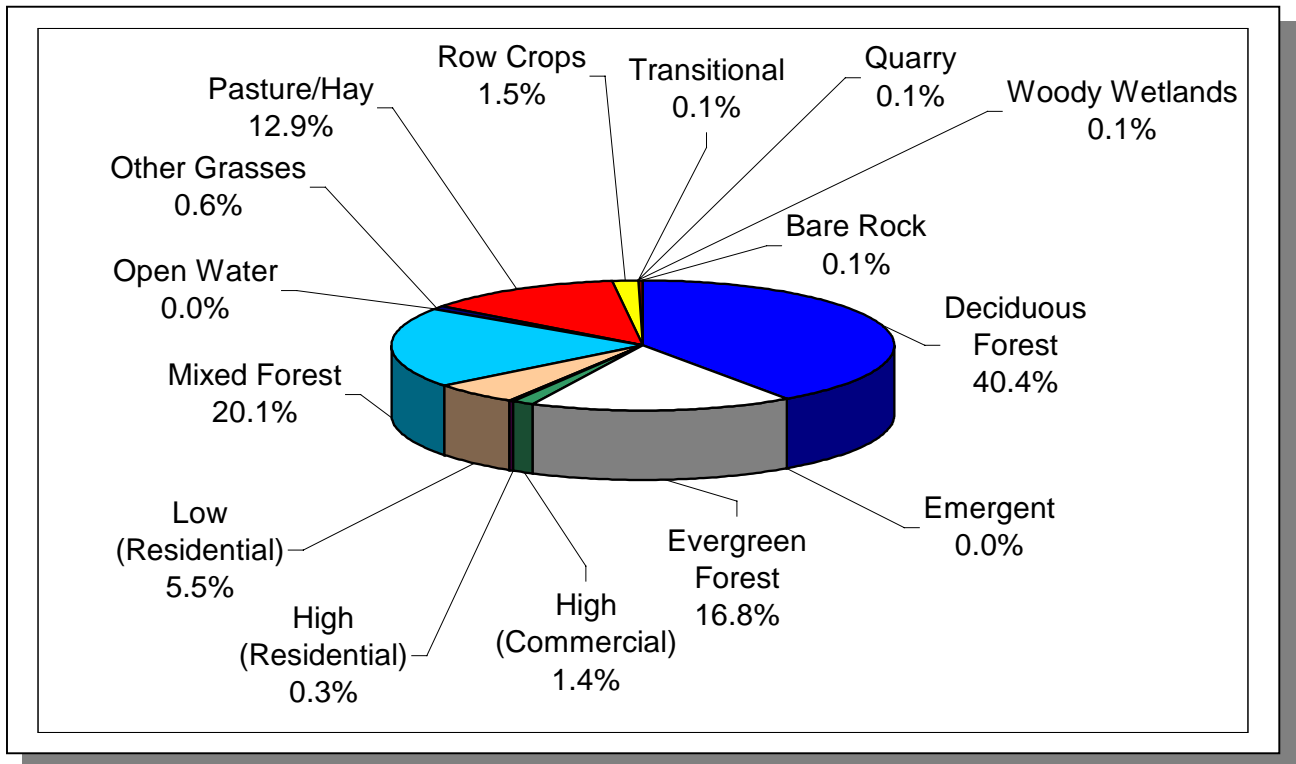


Figure 4-63. Land Use Distribution in Subwatershed 06010103140. More information is provided in Watauga-Appendix IV.

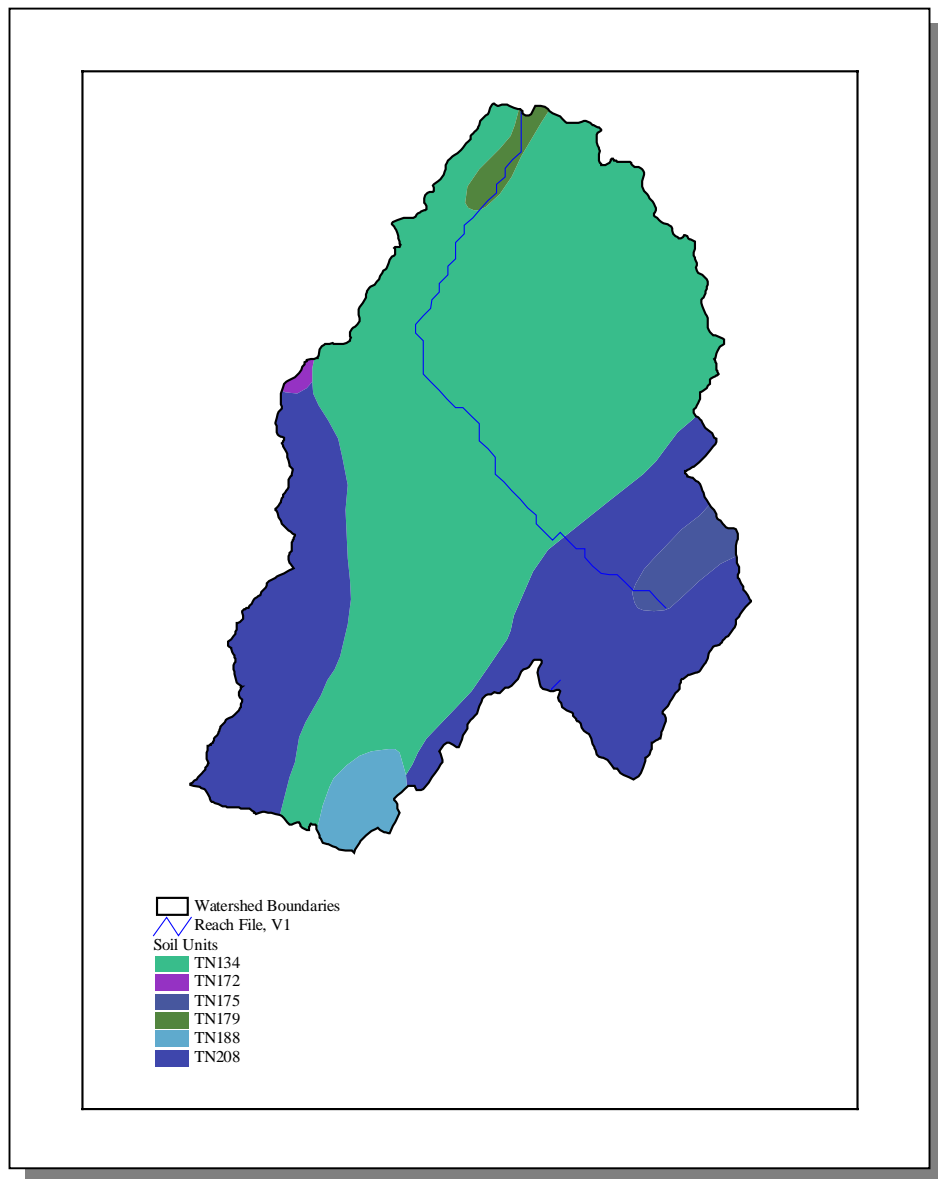


Figure 4-64. STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 06010103140.

STATSGO MAP UNIT ID	PERCENT HYDRIC	HYDROLOGIC GROUP	PERMEABILITY (in/hour)	SOIL pH	ESTIMATED SOIL TEXTURE	SOIL ERODIBILITY
TN134	0.00	B	1.38	5.18	Loam	0.31
TN172	0.00	B	3.87	5.13	Loam	0.26
TN175	0.00	B	1.49	5.23	Loam	0.30
TN179	0.00	B	3.90	5.62	Sandy Loam	0.25
TN188	0.00	B	2.65	5.40	Silty Loam	0.28
TN208	0.00	C	4.02	4.84	Loam	0.25

Table 4-63. Soil Characteristics by STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 06010103140. More information is provided in Watauga-Appendix IV.

	COUNTY POPULATION			ESTIMATED POPULATION IN WATERSHED		% CHANGE
County	1990	1997 Est.	Portion of Watershed (%)	1990	1997	
Carter	51,505	53,132	6.38	3,288	3,392	3.2
Unicoi	16,549	17,221	7.92	1,311	1,364	4.0
Washington	92,315	101,368	0.03	25	28	12.0
Totals	160,369	171,721		4,624	4,784	3.5

Table 4-64. Population Estimates in Subwatershed 06010103140.

Populated Place	County	Population	NUMBER OF HOUSING UNITS			
			Total	Public Sewer	Septic Tank	Other
Johnson City	Washington	49,178	21,214	19,213	2,001	0
Elizabethton	Carter	11,931	5,191	4,991	200	0
Totals		49,178	2,,1214	19,213	2,001	0

Table 4-65. Housing and Sewage Disposal Practices of Select Communities in Subwatershed 06010103140.



Figure 4-65. Location of Historical Streamflow Data Collection Sites In Subwatershed 06010103140. More information is provided in Watauga-Appendix IV.

4.2.L.ii. Point Source Contributions.

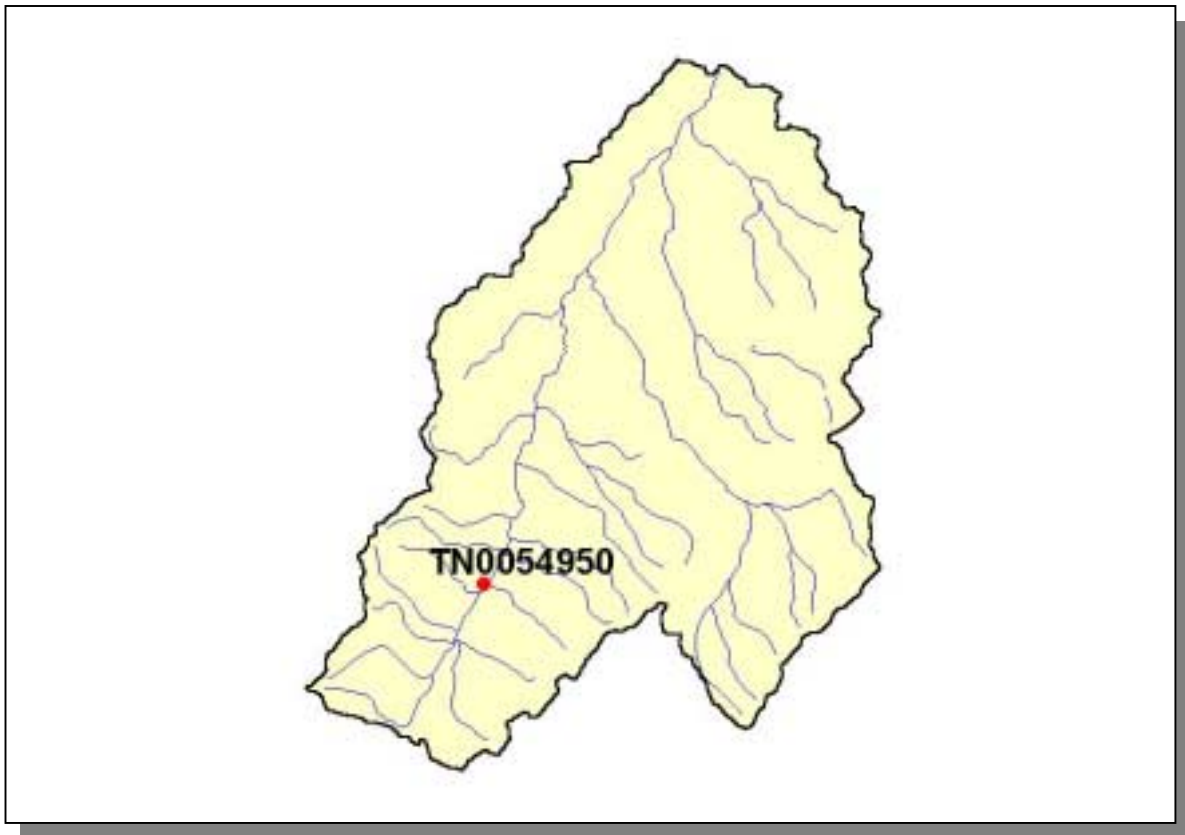


Figure 4-66. Location of Active Point Source Facilities (Individual Permits) in Subwatershed 06010103140. More information, including the names of facilities, is provided in Watauga-Appendix IV.



Figure 4-67. Location of Active Mining Sites in Subwatershed 06010103140. More information, including the names of facilities, is provided in Watauga-Appendix IV.

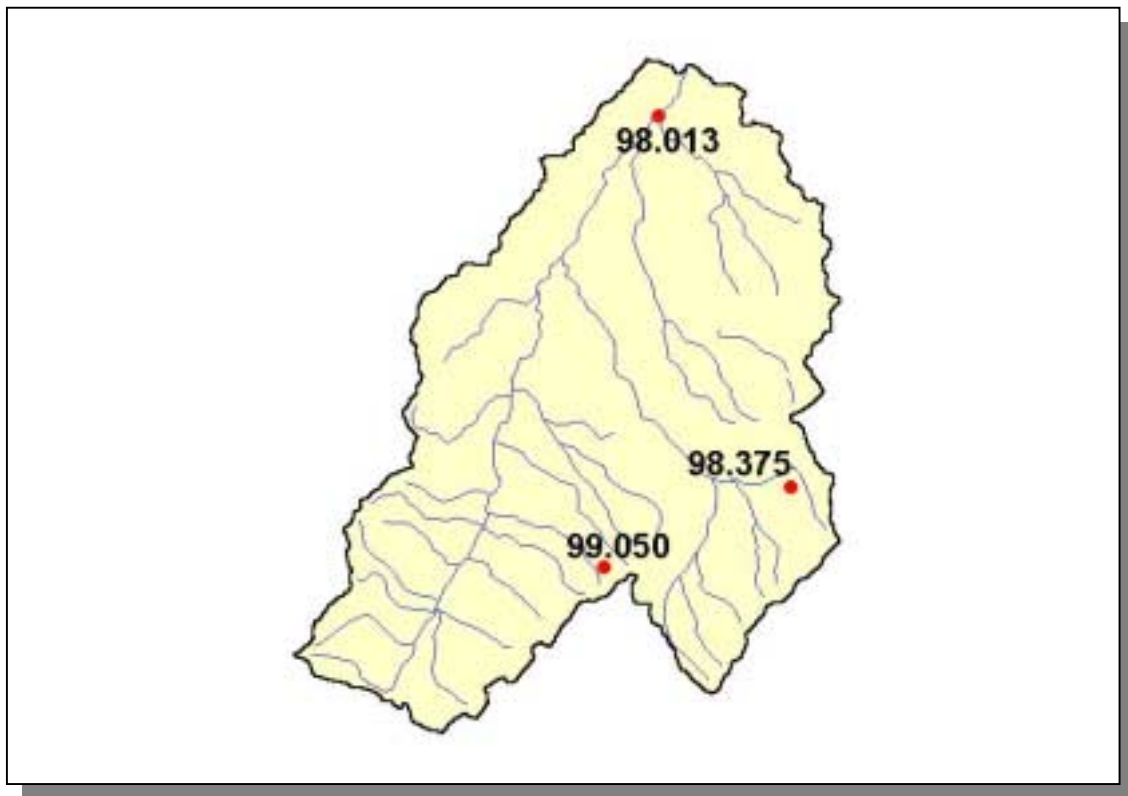


Figure 4-68. Location of ARAP Sites (Individual Permits) in Subwatershed 06010103140.
More information is provided in Watauga-Appendix IV.

4.2.L.iii. Nonpoint Source Contributions.

LIVESTOCK (COUNTS)					
Beef Cow	Cattle	Milk Cow	Chickens	Hogs	Sheep
998	2,546	142	<5	27	13

Table 4-66. Summary of Livestock Count Estimates in Subwatershed 06010103140.
According to the Census of Agriculture, "Cattle" includes heifers, heifer calves, steers, bulls and bull calves.

County	INVENTORY		REMOVAL RATE	
	Forest Land (thousand acres)	Timber Land (thousand acres)	Growing Stock (million cubic feet)	Sawtimber (million board feet)
Carter	161.3	155.5	3.4	12.4
Unicoi	99.3	89.4	3.1	8.5
Washington	54.8	50.3	0.3	0.2
Totals	315.4	295.2	6.8	21.1

Table 4-67. Forest Acreage and Average Annual Removal Rates (1987-1994) in Subwatershed 06010103140.

CROPS	TONS/ACRE/YEAR
Tobacco (Row Crops)	12.11
Grass (Pastureland)	0.37
Grass, Forbs, Legumes (Mixed Pasture)	0.34
Forest Land (Not Grazed)	0.00
Farmsteads and Ranch Headquarters	0.22
Non Agricultural Land Use	0.00
Corn (Row Crops)	5.05
Grass (Hayland)	0.28
Legume Grass (Hayland)	0.40
Forest Land (Grazed)	0.00
Other Vegetable and Truck Crop	6.10
Legume (Hayland)	0.06

Table 4-68. Annual Estimated Total Soil Loss in Subwatershed 06010103140.

4.2.M. 06010103150.

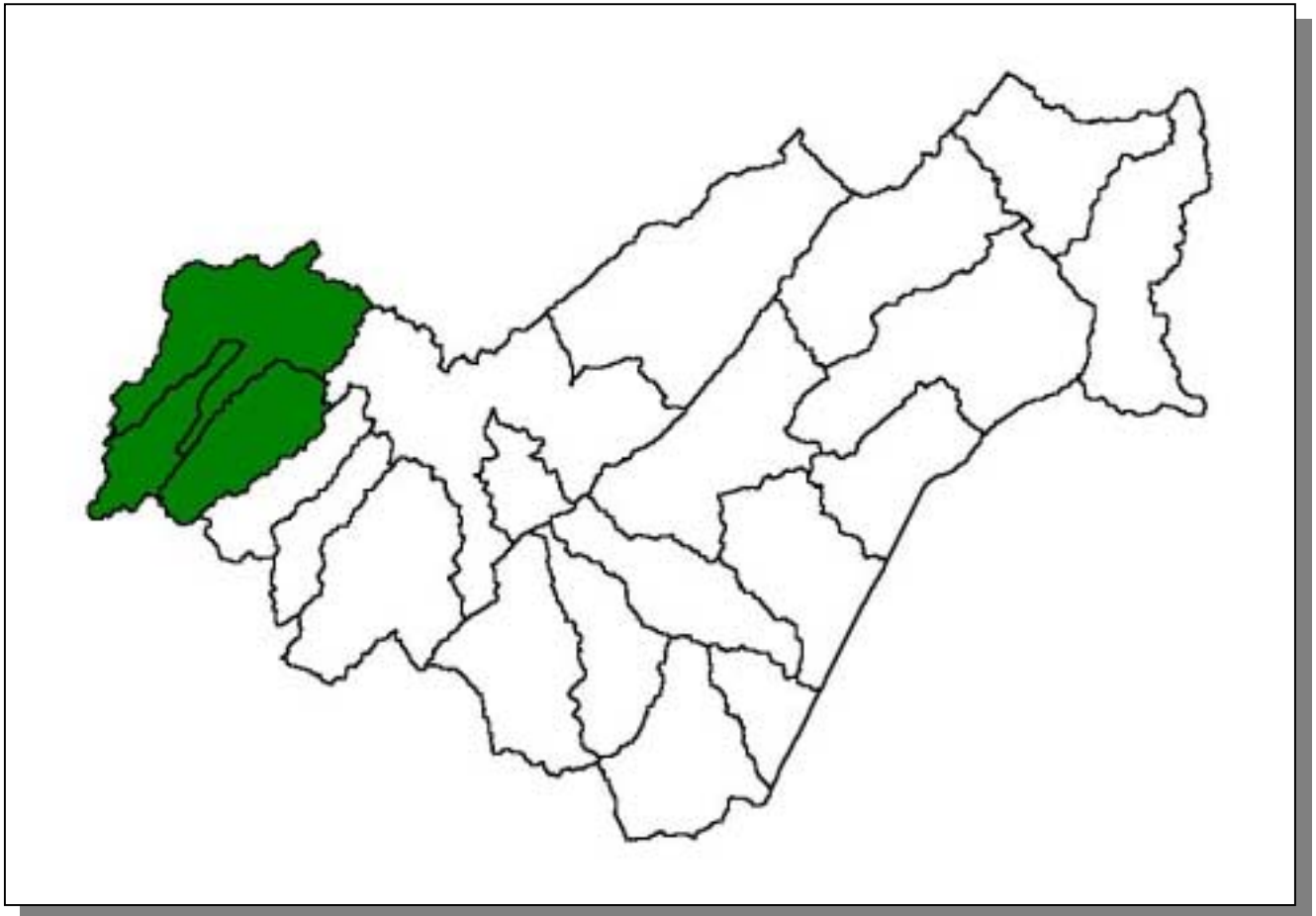


Figure 4-69. Location of Subwatershed 06010103150. All Watauga HUC-14 subwatershed boundaries are shown for reference.

4.2.M.i. General Description.

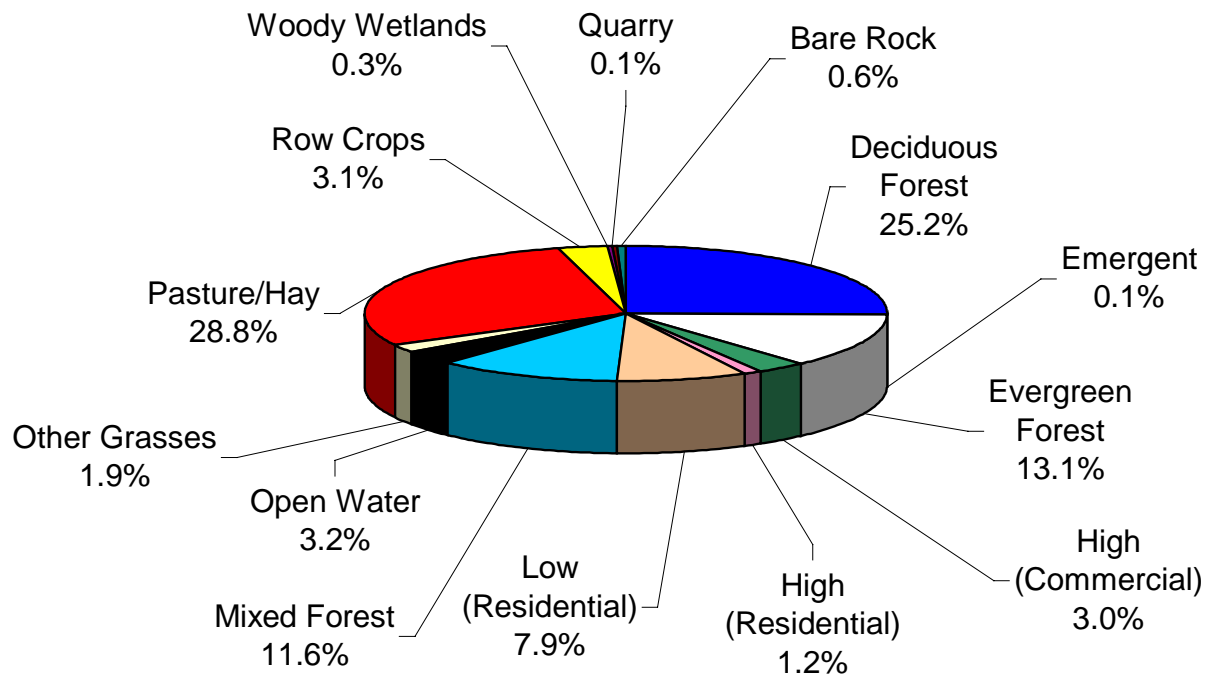


Figure 4-70. Land Use Distribution in Subwatershed 06010103150. More information is provided in Watauga-Appendix IV.

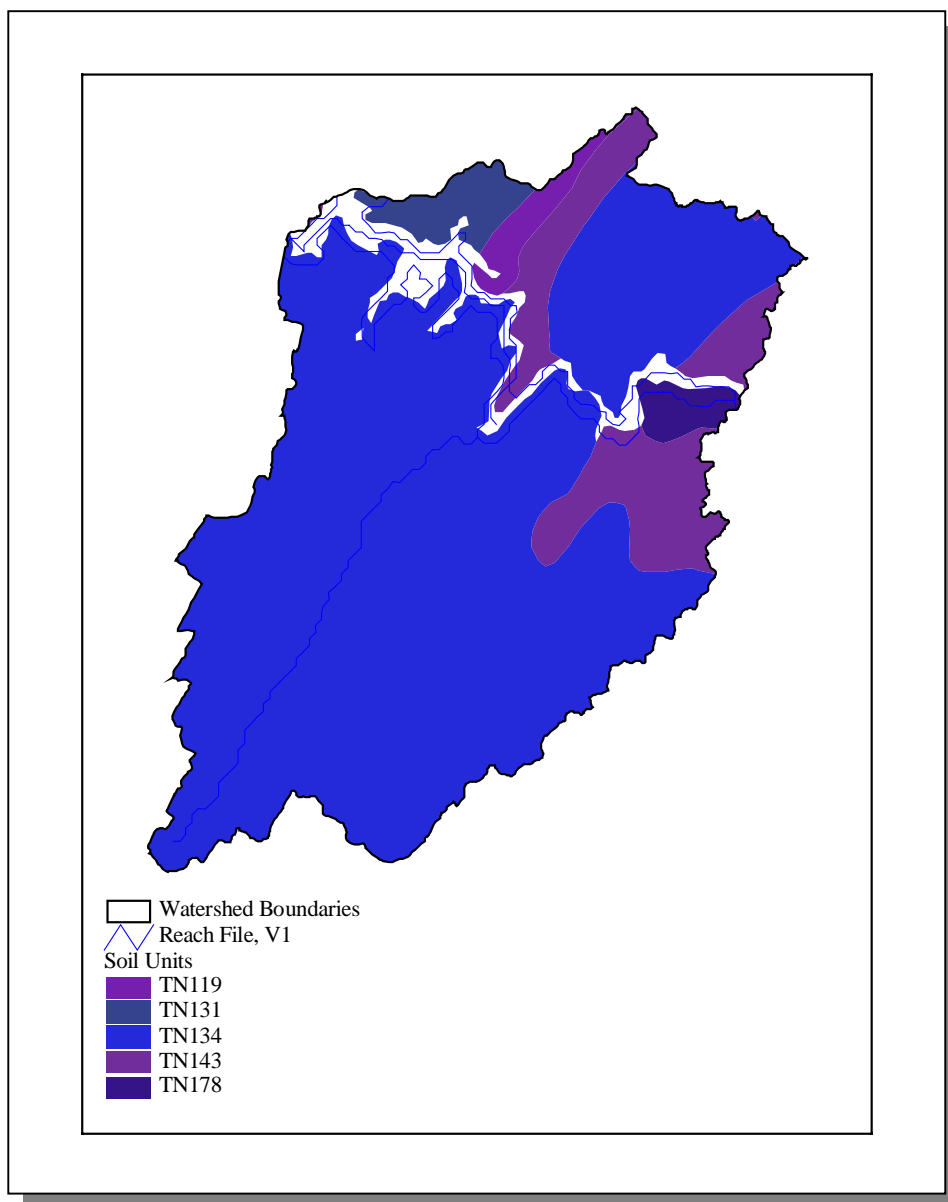


Figure 4-71. STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 06010103150.

STATSGO MAP UNIT ID	PERCENT HYDRIC	HYDROLOGIC GROUP	PERMEABILITY (in/hour)	SOIL pH	ESTIMATED SOIL TEXTURE	SOIL ERODIBILITY
TN119	0.00	0.00	C	5.15	Loam	0.33
TN131	0.00	0.00	C	4.95	Silty Loam	0.33
TN134	0.00	0.00	B	5.18	Loam	0.31
TN143	0.00	0.00	C	6.44	Loam	0.32
TN178	8.00	8.00	C	5.45	Loam	0.28

Table 4-69. Soil Characteristics by STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 06010103150. More information is provided in Watauga-Appendix IV.

	COUNTY POPULATION			ESTIMATED POPULATION IN WATERSHED		% CHANGE
County	1990	1997 Est.	Portion of Watershed (%)	1990	1997	
Sullivan	143,596	150,371	3.89	5,588	5,852	4.7
Washington	92,315	101,368	17.05	15,744	17,288	9.8
Totals	235,911	251,739		21,332	23,140	8.5

Table 4-70. Population Estimates in Subwatershed 06010103150.

Populated Place	County	Population	NUMBER OF HOUSING UNITS			
			Total	Public Sewer	Septic Tank	Other
Johnson City	Washington	49,178	21,214	19,213	2,001	0
Jonesborough	Washington	3,196	1,232	1,098	134	0
Bristol	Sullivan	23,421	10,403	9,751	637	15
Totals		75,795	32,849	30,062	2,772	15

Table 4-71. Housing and Sewage Disposal Practices of Select Communities in Subwatershed 06010103150.

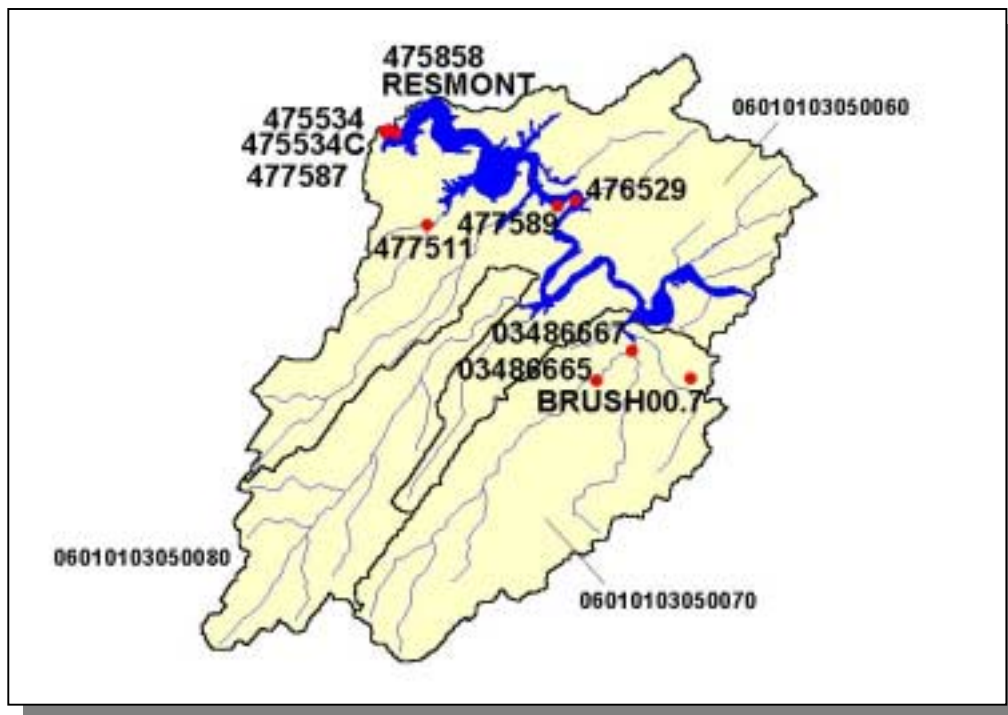


Figure 4-72. Location of STORET Monitoring Sites in Subwatershed 06010103150. Subwatershed 06010103050060, 06010103050070, and 06010103050080 boundaries are shown for reference. More information is provided in Watauga-Appendix IV.

4.2.M.ii. Point Source Contributions.

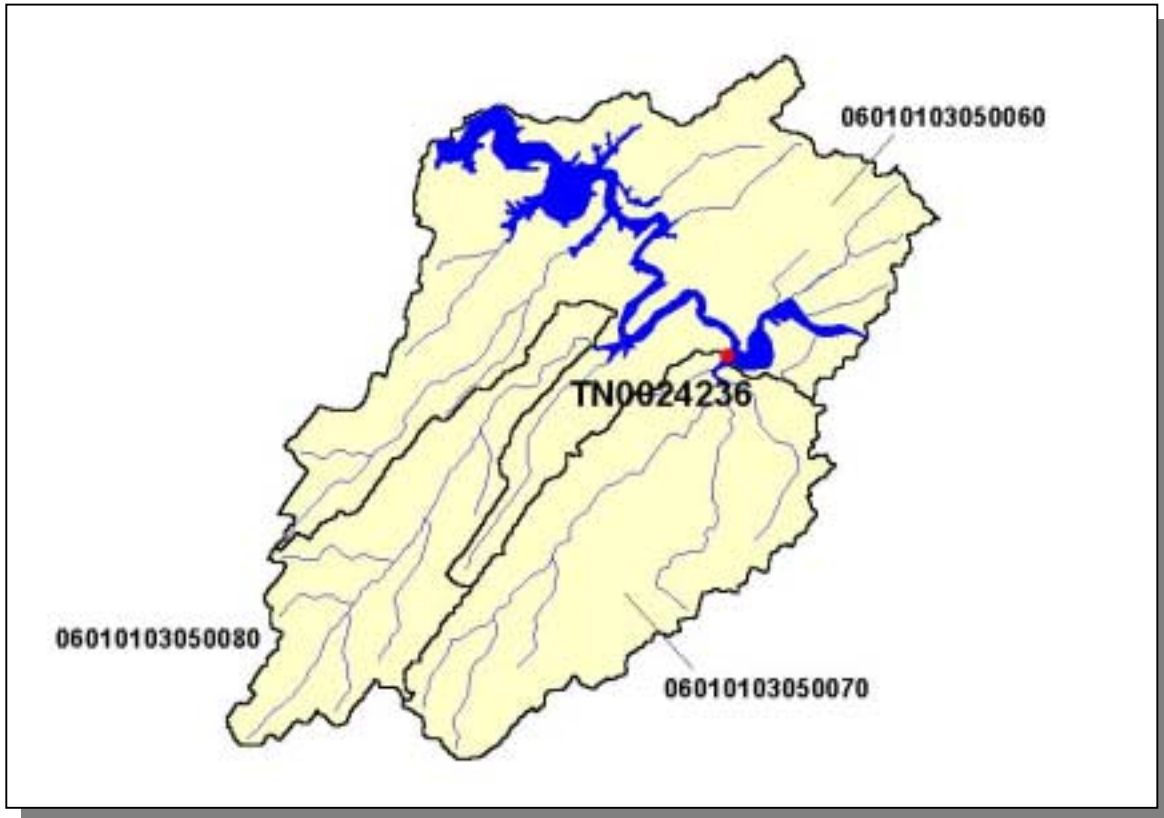


Figure 4-73. Location of Active Point Source Facilities (Individual Permits) in Subwatershed 06010103150. More information, including the names of facilities, is provided in Watauga-Appendix IV.



Figure 4-74. Location of Active Mining Sites in Subwatershed 06010103150. Subwatershed 06010103050060, 05130103 050070 and 06010103050080 boundaries are shown for reference. More information, including the names of facilities, is provided in Watauga-Appendix IV.

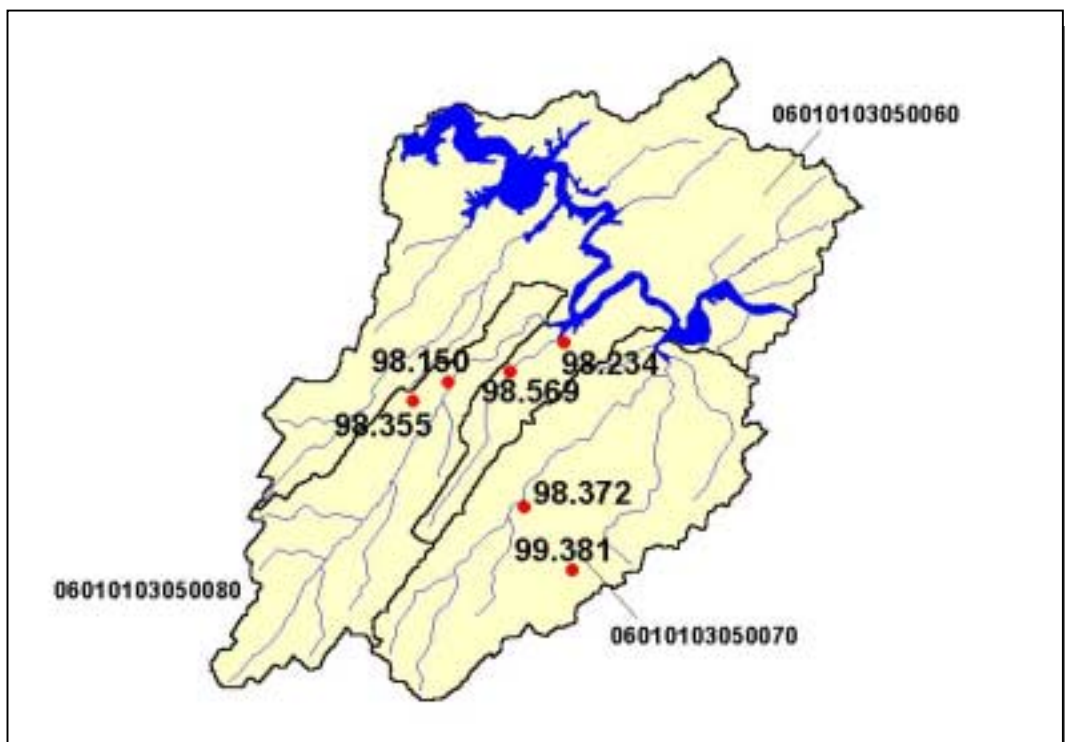


Figure 4-75. Location of ARAP Sites (Individual Permits) in Subwatershed 06010103150. Subwatershed 06010103050060, 06010103050070, and 06010103050080 boundaries are shown for reference. More information is provided in Watauga-Appendix IV.

4.2.M.iii. Nonpoint Source Contributions.

LIVESTOCK (COUNTS)					
Beef Cow	Milk Cow	Cattle	Chickens	Hogs	Sheep
6,026	1,209	13,791	11	65	82

Table 4-72. Summary of Livestock Count Estimates in Subwatershed 06010103150. According to the Census of Agriculture, "Cattle" includes heifers, heifer calves, steers, bulls and bull calves.

County	INVENTORY		REMOVAL RATE	
	Forest Land (thousand acres)	Timber Land (thousand acres)	Growing Stock (million cubic feet)	Sawtimber (million board feet)
Sullivan	123.7	123.7	0.1	0.3
Washington	54.8	50.3	0.3	0.2
Total	178.5	174.0	0.4	0.5

Table 4-73. Forest Acreage and Average Annual Removal Rates (1987-1994) in Subwatershed 06010103150.

CROPS	TONS/ACRE/YEAR
Non Agricultural Land Use	0.00
Corn (Row Crops)	12.33
Tobacco (Row Crops)	5.98
Grass (Hayland)	0.57
Legume Grass (Hayland)	0.19
Grass (Pastureland)	0.74
Grass, Forbs, Legumes (Mixed Pasture)	0.69
Forest Land (Grazed)	0.00
Forest Land (Not Grazed)	0.00
Farmsteads and Ranch Headquarters	0.25
Other Land in Farms	0.02

Table 4-74. Annual Soil Loss in Subwatershed 06010103150.